A Clinical Lecture

ON

TWO CASES OF SOLID ABDOMINAL TUMOUR WITH ASCITES.

Delivered to the Post-Graduate Class at Charing Cross Hospital on Oct. 24th, 1901,

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GENTLEMEN,—By the kindness of Dr. Mitchell Bruce and Dr. Amand Routh I show you two cases of abdominal tumour, calling attention to their points of similarity and contrast.

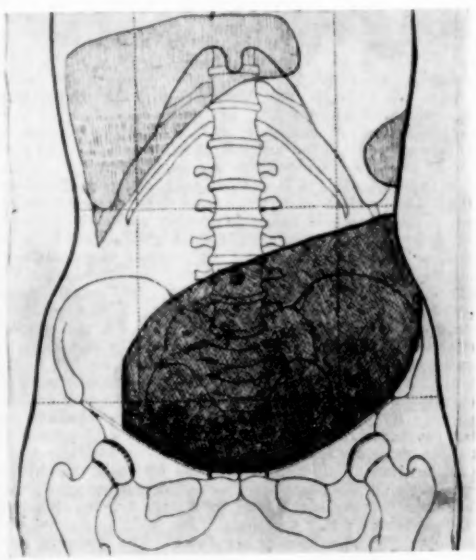
In the first case the patient, a married woman, aged 64 years, was admitted to Charing Cross Hospital under the care of Dr. J. Mitchell Bruce, on Oct. 15th, 1901, complaining of enlargement of the abdomen and of pain. Her past history presents few points of importance. She has had seven children, and menstruation ceased 15 years ago at the age of 49 years. For upwards of 10 years she lived in India, her husband being a soldier. Her family history reveals the presence of a marked tendency to tuberculosis, but she has herself been free from any trace of that disease. Indeed, she never remembers having been ill until Christmas, 1900, when she had an attack of rheumatism. After this she remained in good health until July, 1901, when she began to be troubled with pain in the abdomen which was felt at first below the left costal margin. She also had at this time some incontinence of urine and great frequency of micturition. Since that period her health has failed steadily; there has often been a little sickness in the morning, she has lost flesh, while the abdomen has increased in size, and her strength has also been failing. There has been no discharge, hæmorrhagic or other, from the vagina.

On admission it was noted that there was slight œdema of the legs and feet. The urine was found to be normal in all respects, and although repeatedly examined since her admission it has been always free from abnormal constituents. Both morning and evening temperatures are a little subnormal. The heart and lungs are sound. Inspection of the abdomen shows considerable distension of the lower abdomen which is slightly pendulous. The greatest girth is a little below the umbilicus and measures 45 inches. Above the umbilicus the abdomen is not appreciably distended. Percussion when the patient is in the dorsal position reveals an area of dulness the extent of which is indicated in the sketch. The whole of this area is not absolutely dull, the left lumbar region being sub-resonant. When the patient is turned upon her right side the right lumbar region remains resonant, while the percussion note in the left lumbar region becomes a little less impaired, but by no means clear. Palpation of the dull area shows that it contains a solid tumour freely moveable in a collection of fluid which surrounds it. A fluid thrill can be obtained from side to side passing in front of the tumour. "Dipping" is readily obtained over most of the dull area, while the solid tumour can be tossed from side to side or from below upwards like the fœtal head in a uterus over-distended with liquor amnii (external ballottement). The solid tumour is oval in shape with its long axis transverse to that of the body; its lower edge can be palpated just above the pubes, but the percussion dulness is continued to the pubes without a break. The surface of the tumour is nodular. There is very little abdominal tenderness. On vaginal examination some prolapse of the post-vaginal wall was found; the uterus was directed forwards and was very freely moveable in all directions; the sound passed for two and a half inches. The uterine appendages could not be felt nor could the lower surface of the abdominal tumour be reached either by vaginal or rectal palpation.

In Case 2 the patient, aged 47 years, was admitted to Charing Cross Hospital under the care of Dr. Amand Routh on Oct. 17th, 1901, complaining of enlargement of the abdomen. I had previously seen her in the out-patient department, where she attended by the advice of her medical attendant (Mr. L. Potts of Leatherhead). She has been married for seven years and has never been pregnant. Her menstrual periods have never given her any trouble until about two years ago when they became profuse, lasting 14 days with an interval of about the same period. For 12 months the periods continued to be profuse, but during the last 12 months the amount has gradually lessened until at the present time the duration has diminished to seven days with 21 days' interval. About 18 months ago she became conscious of the presence of a small lump in the lower part of the left side of the abdomen. Since then she has complained of increasing abdominal pain and discomfort both on walking and on lying down, and of steadily increasing abdominal enlargement. Her general health has been fairly good and she does not think that there has been any loss of flesh. There have been no urinary symptoms and no leucorrhœa. Her past personal history and her family history present nothing of interest. She has never been very robust, and she thinks that she was usually anæmic.

On admission it was noted that the patient was well nourished but anæmic; there was a good deal of œdema of the feet and legs, which had not entirely disappeared a week after her admission, although she had been kept in bed all the time. The temperature since her admission has been a little irregular, and on two evenings has reached 99·8° F. The urine contains nothing abnormal, and the heart and lungs are healthy. Inspection shows that the abdomen is uniformly distended to a moderate extent, the greatest girth immediately below the umbilicus measuring 37½ inches. Measurements from the umbilicus to the right and left anterior superior spines are about equal, and the umbilicus is about midway between the pubes and the xiphisternal articulation. There is no bulging of the flanks. Palpation reveals the presence of a large solid tumour lying beneath the thick abdominal parietes. The extent and outline of the tumour can best be defined by palpation and are represented in Fig. 1.

FIG. 1.

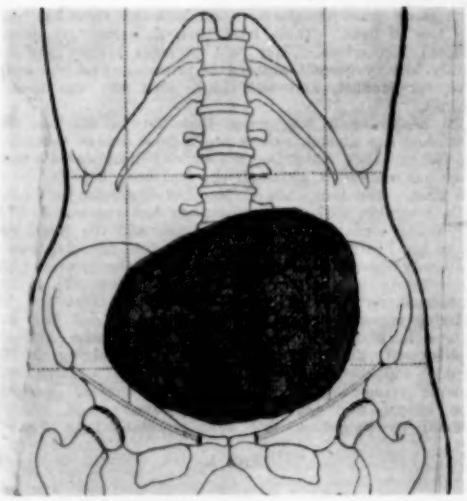


Areas of dulness in dorsal position.

On percussion a resonant note is obtained over the upper third of the tumour in the middle line, showing that in this part it is covered by coils of intestine. Its lower border can be palpated just above the pubes. Over a part of the anterior surface of the tumour represented in the sketch No. 2 there is evidence of the presence of a thin layer of fluid between the tumour and the abdominal wall.

"Dipping" can readily be obtained over this area, although the amount of fluid is not sufficient to yield a percussion thrill. Near the edge of the tumour a rounded nodule lies, just beneath the abdominal wall. A sharp push upon this nodule causes it to recede suddenly and return in a moment to the surface, giving a distinct example of "ballottement." The whole tumour is not nearly as moveable as was that in the last case where ballottement of the whole mass could be obtained. Its general outline is oval and its surface is irregular and nodular. There is very little abdominal tenderness. The total area of dulness (partial or complete) is represented in Figs. 1 and 2. The left lumbar region is,

FIG. 2.



Size and position of tumour as defined by palpation.

however, sub-resonant in the dorsal position and clears a good deal with the patient on the right side. With the patient on the left side the area of dulness increases considerably, as the tumour appears to fall forward against the anterior abdominal wall. The right lumbar and iliac regions are resonant in every position. From these relations it is obvious that we are dealing here, not with free ascites—i.e., with fluid free to move from one part of the peritoneal cavity to another under the influence of gravity—but with fluid limited to a great extent by adhesions, or in some other way. On vaginal examination we find the cervix in its normal position; the uterus cannot be defined by bimanual palpation, but the sound passes upwards and forwards for four inches. In the pouch of Douglas a smooth solid lump of the size of a pigeon's egg is felt and this can be readily displaced by a tap, giving vaginal ballottement. Fluctuation can also be felt in this fornix. As far as can be made out without anæsthetising the patient the solid abdominal tumour is continuous with the uterus. By pulling down the cervix with a volsellum and then practising rectal palpation a thick dense attachment of the tumour to the left side of the fundus can be made out.

Let me now briefly recapitulate the results of the physical examination in the two cases. In the first case we have a solid abdominal tumour surrounded by a large amount of fluid in which it is very freely moveable. The fluid is not free but is limited by adhesions or otherwise. The uterus is small and freely moveable, and no connexion between the abdominal tumour and the pelvic organs can be made out. In the second case we have a solid abdominal tumour with a smaller amount of limited fluid, and much less moveable than the former. It is closely connected with an enlarged uterus, and there is a moveable solid nodule with fluid in the pouch of Douglas. Most of the fluid in this case appears to be in the pelvic cavity. Percussion of the liver and spleen in both cases shows that there is no enlargement of these organs.

We are now in a position to discuss the diagnosis, which I hope you will not consider a waste of time. Too often nowadays one hears the remark from an operator: "We shall know all about it when we open the abdomen." But to be unable to determine the nature of an internal tumour without first removing it is a state of affairs with which we ought not to be content. The frequency and facility with which laparotomy is now performed have led to great neglect of the art of abdominal diagnosis; and for this neglect there is no excuse, because increased experience of abdominal surgery ought to have laid the foundations for greater accuracy of diagnosis, and if the opportunities of operators had been turned to good account it would have already done so. But the slackness which is content with postponing diagnosis until after operation is as much to be deplored as is the timidity which declines the risk of being proved to have reached an erroneous diagnostic conclusion.

The number of conditions which give rise to the occurrence in the abdomen of a large solid tumour with ascites is considerable. These conditions may be enumerated thus: malignant disease of the liver, the spleen, the kidneys, the omentum, and the ovaries; innocent tumours of the ovary, the uterus, and the broad ligament (rarely); and tuberculous deposits. With regard to the two cases under consideration the list can be reduced considerably without much difficulty. Growths of the liver can be excluded by the facts (1) that there is no enlargement of that organ, and (2) that a distinct zone of resonance separates it from the tumour in both cases. Growths of the spleen can be excluded for the same reasons, with the reservation that growths arising in a displaced or wandering spleen give rise to extremely difficult diagnostic problems. Growths of the kidney can also be excluded (1) by the position of the tumour, and (2) by the healthy condition of the urine. Displaced kidneys may give rise to similar difficulties to those presenting in displaced spleen. Tuberculous deposits may in all probability be excluded (1) by the age of the patient (these deposits are rare after the fortieth year and extremely rare in old age); (2) by the size and mobility of the growth in each case (tuberculous deposits seldom form large masses and are usually more or less fixed by adhesive peritonitis); and (3) by the absence of signs of tuberculous disease in the lungs and pleura. Subnormal temperature often accompanies tuberculous disease of the peritoneum, so that the absence of pyrexia is not of diagnostic significance. These points reduce the possibility of tuberculous disease to very low limits. There remain for consideration growths of the omentum, the ovaries, the uterus, and the broad ligaments.

Let us consider first the case of the patient in Case 1, whose age was 64 years, and endeavour to decide which, if any, of these conditions can be excluded. Uterine tumours do not cause ascites, even when malignant, except in the rarest instances. Cases of degenerating fibroids with a little ascitic fluid are occasionally met with, but the amount of fluid is too small to admit of clinical recognition. Even uterine sarcomata do not cause ascites. The presence of a large amount of fluid in this case is therefore an important objection to the theory of uterine origin. Further, the absence of any discharge from the uterus, either hæmorrhagic or other discharge, is another important objection, for large uterine tumours, whether fibroid or malignant, are almost invariably the cause of discharge. Lastly, the size of the uterine cavity (2·5 inches) and the free mobility of the uterus independently of the tumour indicate that the organ is of normal size and not closely connected with it. This view is further confirmed by the fact that the tumour cannot be reached from the vagina or the rectum. The exclusion of growths from the uterus can therefore be satisfactorily accomplished.

Solid tumours of the broad ligament are either fibroid or malignant. In neither case is ascites found. The base of the tumour lies deep in the pelvic cavity and in close association with the uterine border from which it probably, in the majority of cases, arises. Cysts of the broad ligament may form a pedicle, but I have never met with a pediculated solid tumour of the broad ligament. Broad ligament growths may therefore be also excluded, leaving only two others for consideration, ovarian and omental tumours. Solid tumours of the ovary which have a long pedicle are not easily distinguished from solid omental tumours. They may occupy the same position in the abdomen, they are freely moveable, and they are associated with ascites. If the presence of both ovaries in the pelvis can be determined the exclusion of an ovarian origin is certain. But in the case of

large tumours causing great distension of the abdomen this is often impossible, and in the case under consideration we have failed to detect the presence of the ovaries in their normal position. In a woman who has ceased to menstruate for 15 years atrophy of the ovaries will have further increased the difficulty of recognising them. The only possible line of proof which remains is the recognition of the ovarian pedicle. In most cases of ovarian tumour, whether solid or malignant, the pedicle can be palpated by the following simple procedure. The cervix is drawn down with a volsellum so as to depress the uterus and to withdraw it from the abdominal tumour. An assistant then gently pushes the tumour upwards, and in this way the pedicle is stretched, and the finger passed into the rectum can recognise it or a bimanual examination may be made under favourable circumstances. In this way both the existence of a pedicle and the side to which it is attached may be recognised and the thin membranous ovarian pedicle can readily be distinguished from the thick pedicle of a pedunculated subserous fibroid.

In the case before us no pedicle can be palpated, but the distension of the abdomen is too great to permit of a satisfactory bimanual examination being made; the presence of the fluid greatly increases the difficulties of the procedure. The existence of a pelvic pedicle cannot, therefore, be excluded with certainty, so that we have carried the process of exclusion as far as we can go with certainty. A question of probability remains, however, which appears to me to determine the weight of evidence in favour of an omental and not an ovarian origin. If ovarian the pedicle must be a long one, for the growth lies above the pelvic brim and cannot be reached from below. The history of the patient's illness is short (about three months), and the growth of the tumour is therefore rapid, and its existence may be presumed to be of not more than six months' duration. Now an ovarian growth arising from 14 to 15 years after the menopause is extremely unlikely to develop a long pedicle, for the broad ligaments must have undergone considerable shrinkage from the normal atrophic processes which follow the menopause. The tumour is therefore more probably omental. (*Note.*—This patient left the hospital on Oct. 31st, having declined operative interference.)

Turning now to the second case, in which the age of the patient is 47 years, let us take up the differential diagnosis of growths of the omentum, the ovaries, the uterus, and the broad ligament. You remember that in this case a pelvic pedicle uniting the tumour to the uterus was felt distinctly; this fact almost serves to exclude growths of the omentum which, of course, have no pelvic pedicle. It must be remembered, however, that malignant abdominal tumours tend to invade neighbouring organs and in this way a tumour of abdominal origin may acquire a pelvic attachment. Such an attachment, however, would be unlikely to occur alone—i.e., without invasion of all surrounding organs, leading to fixation of the tumour. The mobility of the abdominal mass in this case renders invasion of surrounding parts extremely unlikely and the pelvic pedicle is therefore proof of a pelvic origin. Growths arising in the broad ligament may be excluded for the same reasons as those given in discussing the first case. The diagnosis therefore lies between growths of the uterus and growths of the ovary or ovaries.

It will be well first of all to indicate the general lines of proof available for the differential diagnosis of tumours of these two organs. Symptomatology in relation to abdominal and pelvic diseases practically never renders much assistance in differential diagnosis. Fibroid tumours of the uterus, although they usually cause menorrhagia, may be associated with scanty menstruation, and solid tumours of the ovary cause amenorrhœa nearly as often as menorrhagia, while frequently menstruation is unaffected by them. I profoundly distrust symptoms as an aid to diagnosis. Abdominal conditions must be recognised, and differentiated from one another by a careful study of their physical signs, without any mental bias such as a trust in symptoms often produces. The first point to which I would direct your attention is the length of the uterine cavity. Ovarian growths do not cause enlargement of the uterine cavity while fibroids usually do; therefore, if the sound passes definitely further than the normal length this point is strongly in favour of uterine tumour. The converse cannot unfortunately be maintained, for sub-peritoneal fibroids which cause no hæmorrhage usually also cause no enlargement of the uterine cavity. In the next place, if the ovaries can both be recognised in their normal position, an ovarian origin can be excluded. It must be remembered, however, that the ovaries are often much displaced by fibroid tumours, and nodules of new growth may be mistaken for them. Often palpation of the ovaries is impossible without an anæsthetic, and sometimes impossible then, but a positive result is of great value. Here, again, the converse cannot be maintained, for one frequently finds the ovaries lying behind a fibroid tumour where they would be quite inaccessible to clinical examination.

In the next place, palpation of the pedicle can be practised, and this offers the most reliable means of distinguishing uterine from ovarian tumours in the great majority of cases. The ovarian pedicle is a structure which can often readily be examined by a bimanual or rectal examination, and after a little practice can hardly be mistaken for anything else. The attachment of a sub-peritoneal fibroid is usually very much shorter and thicker, and feels solid rather than membranous. Occasionally such a tumour develops a membranous pedicle, but this occurrence is so rare that allowance need not usually be made for it. Recognition of the ovarian pedicle also tells the side from which the tumour springs. Interstitial fibroids can be absolutely distinguished by this method. Sometimes, however, ovarian tumours develop between the layers of the broad ligament and have no pedicle; sometimes in the case of malignant ovarian tumours secondary nodules develop in the pedicle causing it to assume the character of a fibroid pedicle. Errors arising from such occurrences as these cannot be avoided.

Lastly, ascites is the rule with solid tumours of the ovary, and with fibroids is so extremely rare that its presence almost serves to exclude them. An extended search in text-books and monographs and in the transactions of obstetrical societies has only revealed one such case, recorded by Thomas Keith, and then the ascites only developed after an injury to the tumour caused by a blow upon the abdomen.

In the case which we are now considering we have enlargement of the uterine cavity, a distinct but thick pedicle on the left, and ascites. The two latter points practically settle the question in my own mind that the principal tumour is a solid ovarian growth. But this will not explain the enlargement of the uterine cavity, which is strongly presumptive of fibroid tumour, as the patient is not, and never has been, pregnant. Further, the nodules felt in the pouch of Douglas feel very like subperitoneal fibroid growths from the posterior wall; their mobility practically excludes the possibility of their being secondary malignant deposits in the pelvic peritoneum. The conclusion seems inevitable that both conditions are present—that the main tumour is a solid growth of the left ovary, while the uterus is the seat of one or more small fibroid tumours. (*Note.*—The patient was operated upon on Oct. 30th by Mr. Stanley Boyd who removed a large solid ovarian tumour of the left side; there was also a large amount of free ascitic fluid and the uterus contained several small fibroids. The tumour was a fibroma with extensive cystic degeneration irregularly distributed through it.)

The only remaining point for diagnosis is the *nature* of the growth. In the case of an abdominal tumour it is seldom possible to say more than that it belongs either to the class of malignant growths or to that of innocent growths. Its actual structure can only be determined by the microscope.

With regard to the first case I believe that the growth is in all probability malignant. The history of the illness is very short, the patient having been in good health up to July, 1901. The tumour has, therefore, attained a considerable size in a short time, and its rate of growth must be rapid. Further, there has been considerable loss of flesh, although this does not amount to emaciation. Solid abdominal tumours, with the exception of those of the uterus and ovaries, are usually malignant, especially when accompanied by ascites. The age of the patient is not a point of much importance, but as a general rule old age is presumptive of malignancy. I do not think that much importance can be attached in this case to the presence of œdema of the lower extremities which is probably of mechanical origin, but when such œdema accompanies abdominal growths of small size it is strongly in favour of malignancy.

With regard to the second case the evidence is in favour of innocence. Although the history of the patient's illness is much longer than in the last case, amounting to about 18 months, there has been practically no loss of flesh, and with

the exception of considerable but not profound anæmia her general condition is good. The presence of ascites with solid ovarian tumours is not in the least to be understood as evidence of malignancy, for the innocent growths are invariably accompanied by it. It is a curious phenomenon in intra-abdominal disease that a solid tumour—e.g., a fibroma of the ovary—should cause ascites, while a growth of precisely similar structure in the uterus should not. As in the last case, the œdema of the lower extremities is a mechanical effect of pressure. The solid nodules felt in the posterior fornix being well defined, freely moveable in the fluid, and accompanied by no peritoneal induration, are unlikely to be secondary malignant deposits. They are in all probability small subperitoneal fibroids. This case, therefore, admits of a favourable prognosis.

PRELIMINARY NOTE ON THE POSSIBILITY OF TREATING MITRAL STENOSIS BY SURGICAL METHODS.

BY SIR LAUDER BRUNTON, M.D. EDIN., F.R.S.,
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MITRAL stenosis is not only one of the most distressing forms of cardiac disease, but in its severe forms it resists all treatment by medicine. On looking at the contracted mitral orifice in a severe case of this disease one is impressed by the hopelessness of ever finding a remedy which will enable the auricle to drive the blood in a sufficient stream through the small mitral orifice, and the wish unconsciously arises that one could divide the constriction as easily during life as one can after death. The risk which such an operation would entail naturally makes one shrink from it, but in some cases it might be well worth while for the patients to balance the risk of a shortened life against the certainty of a prolonged period of existence which could hardly be called life, as the only conditions under which it could be continued might to them be worse than death. I was much impressed by the case of a man under middle age whom I had under my care at St. Bartholomew's Hospital. For no fault of his own, but simply because of his disease, this man was really exiled from his family and one might almost say imprisoned for life inasmuch as he could only live in a hospital ward or a workhouse infirmary. Whenever he left the hospital or infirmary with an amelioration of his distressing symptoms and returned home the exertion brought on an exacerbation and he had to leave home again in a few days to return to the hospital or infirmary. It occurred to me that it was worth while for such a patient to run a risk, and even a very grave risk, in order to obtain such improvement as might enable him at least to stay at home. But no one would be justified in attempting such a dangerous operation as dividing a mitral stenosis on a fellow-creature without having first tested its practicability and perfected its technique by previous trials on animals. Accordingly I obtained a licence and certificates a year ago in order to make the necessary experiments, but unfortunately other calls upon my time have not allowed me to do more than to make trial experiments of dividing stenosed valves in diseased hearts from the post-mortem theatre and on healthy valves in the hearts of cats, and also to try the proposed operation in the dead animal. It may be some months longer before I can get anything more done, and I therefore think that it may be worth while to write this preliminary note, especially as, after all, if the operation is to be done in man it will be surgeons who will do it, and they must, of course, make their own preliminary experiments, however fully the operation may be described by others, and each must find out for himself the method which he will employ in each particular case.

The first question that arises is whether the mitral orifice should be enlarged by elongating the natural opening or whether the valves should be cut through their middle at right angles to the normal opening. I think there can be little doubt that the former would be the better plan, but the latter is the more easily performed, and it might be sufficient to effect the desired purpose of facilitating the flow of blood from the auricle into the ventricle. The knives which I have used have been like tenotomy knives, but some which I have had made of ladies' bonnet pins were too thin and flexible for stenosed valves although they were sufficiently strong to divide the normal valves in the hearts of cats. The cutting edge of some of these was only a quarter of an inch, but this is too short and a cutting edge of from half an inch to an inch is really required. The main part of the valve can be divided with comparative ease, but the thickened edge is firm and it resists the knife. I have not yet decided on the best form of knife, and its form must depend to some extent upon whether the surgeon decides to operate from the auricle or from the ventricle. The latter is less likely to bleed as the knife need not be much thicker than a needle, and a needle wound of the ventricle rarely gives rise to any bleeding. I have often observed this in animals, especially during the experiments of the Hyderabad Chloroform Commission. The same is the case in man, whilst a needle puncture in the auricle may give rise to much bleeding.[1]

The plan which I have used (but only in the dead animal) for exposing the heart is that of Ninni of Naples, recommended by Rotter and described in the *Medical Review* for July, 1900, p. 400. In consists in making incisions from the left edge of the sternum outwards to the left along the lower edges of the third and fifth ribs, connecting their outer ends by a third incision, and dividing both the soft structures and the fourth and fifth ribs. The window thus made is forcibly turned back on the sternum, the sternal attachments of the ribs yielding to the pressure. In this way the heart is sufficiently exposed, and the lung being pushed back the pericardium can be divided and the knife can be introduced into the ventricle. I have only inserted the knife into the ventricle *in situ*, and if one wished to operate through the auricle the window would probably require to be made by an incision at the lower border of the second rib, although by pulling upon the heart it might be displaced sufficiently to allow a knife to be put into the auricle even when the incision is made at the lower border of the third rib.

In many experiments made for other purposes I have been astonished at the way in which the heart went on beating, apparently quite unaffected by pulling, compressing, or handling of any kind. In operating on the living heart the knife should be introduced during diastole, as one is less likely to wound the opposite wall of the ventricle. The pericardium should not only be opened for convenience of operation, but should, I think, be left open so as to allow any blood which might ooze out through the ventricular wound to flow away instead of remaining in the pericardial cavity, for the heart has very little power indeed to resist pressure from pericardial distension, especially if it comes on rapidly.

The good results that have been obtained by surgical treatment of wounds in the heart emboldens one to hope that before very long similar good results may be obtained in cases of mitral stenosis.

Stratford-place, W.

THE TRIAL, EXECUTION, NECROPSY, AND MENTAL STATUS OF LEON F. CZOLGOSZ,

ALIAS FRED NIEMAN, THE ASSASSIN OF PRESIDENT MCKINLEY.

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With a Report of the Post-mortem Examination,

BY E. A. SPITZKA,
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(*Concluded from p. 293.*)

THE REPORT OF THE POST-MORTEM EXAMINATION BY MR. SPITZKA.

THE post-mortem examination was performed by me under the supervision of Dr. Carlos F. MacDonald of New York, who was requested by the State Superintendent of Prisons to take medical charge of the execution in conjunction with Dr. John Gerin, prison physician. The examination began at

[1] Medical Record, Dec. 15th, 1900.

7.50 A.M. and was completed at 12.30 P.M. Among the witnesses were the physicians who had been in attendance at the execution.

As the body lay upon the table in the dorsal position the right leg, to which the electrode had been attached, was slightly flexed and was a trifle abducted. This attitude of the body has been found to be uniform in the post-mortem examinations made on many other electrocuted criminals by Dr. Ira Van Gieson.[1] In all of these cases the electrode had been applied to the knee flexure. Corresponding to the attachment of the leg-electrode there was a superficial blistering, with some desquamation of the epidermis and some œdema. At the site of application of the head-electrode there were only a few signs of vesication, limited to the occiput. Post-mortem discolourations existed in all the extremities, but not in the trunk, head, or neck, where the skin was fairly white. There was post-mortem lividity of the toe- and finger-nails. The pressure of the straps had not produced any discolourations. There was a discharge of small amount from the urethra, probably of seminal fluid.

The assassin's physiognomy may be described as youthful and with rather a pleasant expression. The nose was pointed, slightly *retroussé*, and fairly straight, deviating a little at the point of the injury inflicted at the time of the assassination. The eyes were blue and the pupils were equal and moderately dilated. The hair was a light brown and was slightly curly. The face was oval and symmetrical. The ears were well formed and absolutely symmetrical. The mouth was well shaped and the lips were full; measuring the true orifice, the width was four centimetres, between the outer angles it was five centimetres. The teeth were of normal shape, but were in poor condition. The external genitals were normal and were unclean with accretions of smegma under the prepuce. There were two flat cicatrices, one four millimetres in diameter, the other half as much, on the mucous surface of the prepuce about five millimetres from the corona glandis. The tissues under and about these cicatrices were not indurated, and the scars were doubtlessly the remains of chancroids acquired at some time previously. As stated before, there had been a discharge of seminal fluid, some of which was still within the urethral passage. At 8.10 A.M. the surface temperature of the body, taken on the side of the chest with a "Seguin" surface-thermometer, was 97°F.; per os it was 97·4°. The body cooled very slowly throughout the examination and the greatest amount of heat appeared to be retained in the brain. Rigor mortis set in about three hours after death.

The following measurements of the head were recorded (the measurements are given in centimetres). Maximum circumference (21½ inches), 54·6; maximum antero-posterior diameter (from the glabella to the maximum posterior point), 18·7; maximum lateral diameter (cephalic index = 82·88), 15·5; bi-auricular diameter (between the roots of the zygomæ), 15·0; length of the face (from the inter-superciliary point to the superior alveolar point between the middle incisors), 9·2; bi-zygomatic diameter, 14·5; minimum frontal diameter, 12·0; diameter from the glabella to the inion, 19·1; from the vertex to the hair-line, 12·0; from the hair-line to the root of the nose, 6·0; from the root of nose to its base, 5·3; from the base of the nose to the chin, 7·0; from the vertex to the chin (diameter), 25·4; breadth between the pupils of the eyes, 6·8; breadth of the nose at its base, 3·4; width of the mouth internally, 4·0; externally, 5·0; length of the ears (both sides equal), 6·1. After these measurements had been taken about 50 minutes were devoted to the making of plaster-moulds of the entire head. A cast has since been made from these moulds and two photographic views, in full face and in profile, were taken of it.[2] Unfortunately the left ear in the mould had been broken during transportation from Auburn and the fragments were pieced together with difficulty. The defects have been rectified in the photograph. On the subject the ears were perfectly symmetrical, both as to form and size. The moulds were made upon the head while the body lay prostrate upon the table. This attitude gave rise to the prominence of the "Adam's apple," and to the slight parting of the lips. The hair was rubbed well with vaseline and was flattened as much as possible to prevent the plaster from adhering. On the skull the following measurements were taken: maximum antero-posterior diameter, 18·0 centimetres; maximum lateral diameter, 14·7 centimetres; cranial index = 81·66.

The head of Czolgosz, as is typical of the Poles, falls in the sub-brachycephalic class; according to Weisbach, the cephalic index of 40 Poles was 82·9 (82·88 in Czolgosz).

At the time of Czolgosz's reception at the Auburn State Prison (Sept. 27th) the measurements of his body were taken according to the Bertillon system by J. N. Ross. I reproduce here the more important figures (the measurements are given in centimetres):—Stature (five feet seven and a half inches), 171·4; stretch, 181·0; trunk, 91·1; head—length 18·6, width 15·6; cheek, width, 14·5; right ear, length, 6·3; left foot, 26·0; left middle finger, 11·7; left little finger, 9·0; left cubit, 47·2. "These measurements are all medium and each is consistent with the others. The stretch and cubit measurements might be said to be slightly out of proportion, indicating that his forearms were slightly longer than those of a majority of men of his stature, but this excess of length is not sufficient to call for comment." His weight on that day was 141 pounds. The marks and scars are here reproduced in the order in which they appear on the identification card of the Prison Department. "I. Sev. sm. cics. post. first finger, left hand near 2nd joint. Cic. of 1 ob. ex. on 1st phal. 3rd finger left hand post. II. Cic. of 3 rec. ver. crossing 3rd joint, mid. fgr. right posterior. Cic. of 1 circ. at 5 over right wrist post. III. Mole at 5 under left cheek-bone and 9 to left med. line. IV. Sev. moles on front and back of neck."

Next the cranium was opened and the brain was removed. The scalp was divided by means of a median incision passing from the glabella to the inion. On incising the scalp a quantity of dark fluid blood escaped. The scalp was of moderate thickness, firm, and well adherent to the skull. The two flaps of the scalp were dissected from the skull and were drawn down on either side of the head. The sutures were well marked and no synostosis was observed. Supernumerary or abnormally developed bones were not discernible. The calva was removed by a saw-cut passing around the cranium about 1·5 centimetres above the glabella and about 2·5 centimetres above the inion. In the removal of the calva the saw was supplemented by the chisel and the hammer. The calva came off rapidly, the dura mater being non-adherent. There was no marked escape of cerebro-spinal fluid. Along the saw-cut the skull was slightly flatter in the fronto-parietal region on the right side, while it was more curved or rounded on the left. The right parieto-occipital region was a trifle fuller than on the left side. The markings on the internal surface of the calva, such as the groove for the superior longitudinal sinus and for the meningeal vessels, the digitations, and the impressions for the Pacchionian bodies, &c., were all distinctly marked. The dura mater was greyish-white, moderately translucent, and somewhat dry; there existed a marked engorgement of dark fluid blood. The dura mater was neither tense nor loosened. The Pacchionian bodies were of the usual number and distribution. The inner surface of the dura mater was fairly moist. There were no evidences of hæmorrhagic pigmentation or of pachymeningitis.

The brain, invested by the pia-arachnoid, was exposed by crucial incisions into the dura mater which was perfectly non-adherent to the membranes within. The brain was removed carefully and during most of the subsequent examination was kept in a salt solution (about one part in 20 parts of water). At the time of removal, still invested by the pia-arachnoid and with the ventricles unopened, the entire brain weighed 51½ ounces avoirdupois (1460 grammes). The base of the skull was normal in every respect. The pia-arachnoid was of normal thinness and devoid of opacities or other signs of disease, past or present. The only unusual appearance was an injection of bright red blood in the finer vessels of the pia, due, if we may judge from previous reports of necropsies on electrocuted criminals, to the high electromotive force exerted by the fatal current in this part of the body. The pia was stripped off with ease, being nowhere adherent to the cortex.

Examination of the brain.—In general the brain presented no marked peculiarities of shape or size. It was firm to the touch and no portion of it, despite most careful examination, felt softened or indurated. It was divided into its natural segments according to the following method. The ectal border of the optic tract and the tænia thalami ("ripa" of Wilder) were used as guides for a single simple incision; those of either side converge cephalad to meet in front of the chiasm; the usual cut through the callosum and the

[1] Cited by Dr. Carlos F. Mac Donald in "The Infliction of the Death Penalty by means of Electricity," 1893.

[2] THE LANCET, Feb. 1st, 1902, p. 291.

terma (lamina terminalis) completed a tri-section which left the cerebrum (prosencephal) and brain-axis separated as nearly the ideal as could be. This mode of dissection is a modification of Meynert's plan and is a method by which each hemi-cerebrum, with the insula intact, is separated from the brain-stem; whereas Meynert by trenching round the circum-insular boundaries separates the convex cortical mass from the brain-stem plus the insula, leaving a cortical component attached to the axial structures. The Meynert method consequently does not give the weight of the cerebral hemispheres, strictly speaking. As far as the caudatum and lenticularis are concerned this would not be a serious objection; but as it also excludes the important cortical area of the insula—no inconsiderable portion of the cerebral projecting and associating tracts—it falls short of the method adopted here. After the brain had been thus dissected and drained and the pia-arachnoid stripped off the cerebrum, the segments were found to have the following weights:—Left hemi-cerebrum (without pia), 585 grammes; right hemi-cerebrum (without pia), 600 grammes; cerebellum (with pia-arachnoid), 166 grammes; and the isthmus (with pia-arachnoid), 64 grammes. A total weight of 1415 grammes, or a trifle less than 50 ounces, was thus given.

Examination of the paracoeles (lateral ventricles) in both hemi-cerebra revealed the veins of the striatum (the striatal veins) injected with deep violet-coloured blood. The cornua were of normal extent and conformation throughout. The endyma was smooth, the choroid plexus was normal and contained little blood; the velum interpositum ("velum" of Wilder) was normal.

The following is a description of the fissures and gyres:—

Left hemi-cerebrum.—The Sylvian fissure was six and a half centimetres in length, the epi-Sylvian two and a quarter centimetres; the hypo-Sylvian was absent. The pre-Sylvian ramus was two centimetres in length and the sub-Sylvian one centimetre in length. The central fissure was fairly flexuous and ramified; it was uninterrupted throughout its length and was separated from the Sylvian by a narrow isthmus. At its ventral end the fissure terminated in a hook-like manner. The dorsal end appeared on the mesial surface. The super-central fissure was confluent with the super-frontal but was separated from the pre-central fissure. The super-frontal fissure was distinct in the mid- and post-frontal regions but was absent in the pre-frontal region. The three-tier type was preserved in the pre-frontal region by the existence of a medi-frontal fissural segment about four centimetres in length and which was confluent with the orbito-frontal. The pre-central fissure was confluent with a small diagonal fissure and this in turn with the pre-Sylvian. It sent an "anterior pre-central ramus" across the medi-frontal gyrus to anastomose with the super-frontal fissure. The sub-frontal fissure was independent and sent off several rami into the neighbouring gyres. There was a very long radiate fissure. The pre-central gyrus was not very broad as compared with the post-central. The three frontal gyres were fairly massive and were marked by fissures which ran generally transverse. The post-central fissural complex consisted of three segments. The dorsal one was very flexuous and ramified, but independent. The middle segment was confluent with the parietal, and was only superficially joined to the third segment, the sub-central. The trans-post-central was hardly visible on the external surface, but on examination it was found to communicate with the circum-insular fissure. The parietal fissure was notable for the angle which it made with the inter-cerebral cleft, converging rapidly towards it as it passed the cauda. It communicated with the paroccipital fissure over a vadum about six millimetres in depth. Otherwise the paroccipital did not communicate with any other fissure. There were two trans-parietal fissures—the cephalic one communicating with the pre-cuneal fissure on the mesial surface. The temporal lobe was of good size and shape. The super-temporal fissure was uninterrupted throughout its length and communicated with the inter-medial over a slight vadum. The medi-temporal fissure was represented by four segments. Numerous fissures, the lateral occipital among them, marked the region of the occipito-temporal transition. The post-calcarine fissure appeared on the lateral surface for about two centimetres. The post-central gyrus was of good development and was fairly wide. The marginal, angular, and post-parietal gyral portions of the sub-parietal lobule exhibited a moderate development. The parietal gyrus was of cuneiform shape, with broad cephalad and narrow caudad. The super-temporal gyrus was very sinuous. The remaining temporal gyres were fairly wide and well-developed. The sub-calcarine gyrus was wide in its caudal portion. The cuneus was small, rather unusually so. The pre-cuneus was of good size and conformation. The para-central gyrus was of typical appearance and of the usual size. It was traversed by a well-marked inflected fissure and by a tri-radiate intra-para-central fissure. The mesial surface of the super-frontal gyrus was of moderate size and was marked by five or six transverse fissures, three of which were rami of the super-callosal. The callosal gyrus in its cephalic half was doubled by a long fissure running parallel with the super-callosal; in its caudal part it was traversed by several transverse fissures. There were two well-marked rostral fissures (rostral and sub-rostral) and a short trans-rostral. The super-callosal fissure was long and anastomosed with the para-central over a vadum of five millimetres. The para-central fissure in turn anastomosed with the pre-cuneal over a vadum of three millimetres. The occipital and calcarine fissures anastomosed freely. A "posterior cuneo-lingual" sub-gyrus tended partially to separate the calcarine from the post-calcarine. The collateral fissure was fairly well ramified. The insula exhibited a good development. There were six gyres proper with seven peri-insular digitations. The insula was completely covered by the opercula.

Right hemi-cerebrum.—The Sylvian fissure was five and a half centimetres in length; the epi-Sylvian, three centimetres; the hypo-Sylvian, one and a half centimetres; and the pre-Sylvian, two and a half centimetres. The sub-Sylvian was very short. The epi-Sylvian was three centimetres long and the hypo-Sylvian one and a half centimetres. The central fissure was uninterrupted throughout its length and was separated from the Sylvian by a very narrow isthmus. Its dorsal end crossed the dorsi-mesal margin. The super-central fissure anastomosed with a long super-frontal fissure but not with the pre-central fissure. The pre-central fissure joined both the trans-pre-central and the diagonal and by means of these the Sylvian cleft.[3] This fissure gave off an "anterior pre-central ramus" from which sprang the caudal segment of the sub-frontal fissure. The super-frontal fissure was long and uninterrupted, extending nearly to the frontal pole. There was no true medi-frontal fissure present. The sub-frontal fissure was in two segments, the caudal segment being confluent with the pre-central by means of its "anterior ramus"; the cephalic segment anastomosed with the orbito-frontal. Besides an independent radiate fissure there were other unnamed fissures in the sub-frontal region. There were two long sagittally directed orbital fissures; the lateral one of these communicated with the orbito-frontal. As in the left half the pre-central gyrus was rather narrow as compared with the broader post-central gyrus. The three frontal gyres were all of good width and were chiefly marked by transverse fissures. The post-central fissural complex was made up of two segments superficially confluent with each other. The dorsal segment was short. The ventral segment was longer and was confluent with the parietal fissure. The parietal fissure was uninterrupted, deep, and separated from the paroccipital fissure by an isthmus. There were a well-marked post-paroccipital fissure and one distinct trans-parietal. The super-temporal fissure was long, uninterrupted, and not deeply confluent with any other fissure. There were four medi-temporal fissural segments. The inter-medial joined the parietal. There was a fairly well-marked "lateral occipital" fissure. The post-central gyrus was fairly wide and flexuous. The parietal gyrus was wide and exhibited the same cuneiform shape as described for the left side. Of the sub-parietal gyres the angular gyrus was of fair size, while the remainder of this territory showed only a moderate development. The paroccipital gyrus was very small, but was quite flush with the general surface of the brain. The gyres of the temporal lobe showed very good development, and in the occipito-temporal transition the markings were quite complex. On the mesial surface the super-callosal fissure consisted of two segments, and there was a similar duplication of the callosal gyrus (in its cephalic portion) as has been described in the left half. A notable peculiarity consisted in the confluence of the inflected fissure with the para-central stem, while the cephalic para-central limb was separated from its stem but was joined to the caudal end of the super-callosal. There was a tri-radiate intra-para-central. The pre-cuneal fissure

[3] Found by Sernoff in 44 per cent. of Polish brains.

would be independent but for a superficial junction with the para-central. The occipital fissure was deeply confluent with the calcarine. The post-calcarine was tri-radiate and was separated from the calcarine by a posterior cuneo-lingual isthmus. The super-frontal gyrus was fairly well marked by many transverse fissures, and by two long and distinct rostral (rostral and sub-rostral) fissures. The pre-cuneus was large, a little larger than its fellow on the left side. The cuneus was as small as on the left half. The sub-calcarine gyrus was of considerable width in its caudal portion. The insula presented an ordinary degree of development and, as on the left side, it possessed six gyres, with seven peri-insular digitations.

Section of the brain.—In cutting the brain, the resistance to the knife suggested neither increased nor diminished consistence. The cut surface was moderately moist, the grey as well as the white matter were of normal colour, the cortex was of the usual thickness, and there existed neither anæmia nor hyperæmia. No hæmorrhages, sclerotic patches, neoplasms, or other lesions were discoverable. The basal ganglia, crura, cerebellum, pons, and oblongata were all perfectly normal, there being even an absence—so far as naked-eye examination could determine—of the small hæmorrhages in the floor of the fourth ventricle which have been usually found in electrocuted criminals.[4] The spinal cord was not examined.

Examination of the thorax and abdomen.—An incision was made from the top of the sternum to the pubic symphysis, a quantity of dark fluid blood escaping. The diaphragm was found to be attached to the sixth rib on both sides of the sternum. About three to four fluid-drachms of clear fluid were found in the pericardial sac. The heart was firm and appeared to be in a tetanised condition; it had ceased in systole. This contracted condition of the heart was doubtlessly due to the high electromotive force of the fatal current. The ventricles were empty; the heart-walls, endocardium, and valves were normal. The weight of the heart was 11 ounces. Both lungs were somewhat emphysematous, floating a trifle more than half out of water. They were moderately pigmented and of firm consistency. None of the bronchial lymph-nodes were enlarged. Except for a few bands of pleuritic adhesions of the right lower lobe, there were no lesions in either lung. The left lung weighed seven and three-quarter ounces, the right lung eight and a half ounces. The larynx, the aorta, and the venæ cavæ were normal. The stomach was in the normal position, well contracted, and well under the diaphragm, with only a small residue of food near the pyloric end—the prisoner having had nothing to eat since the evening before the execution.[5] The examination of the intestines was a brief one as nothing unusual was seen. The appendix was eight centimetres in length, free, and lay dorsad and mesad of the cæcum. The pancreas was normal. The liver was dark and hyperæmic but healthy; there were no patches, infarctions, or other lesions. The gall-bladder contained about one ounce of clear bile. The liver weighed 61 ounces. The spleen was also hyperæmic, mottled with light pink streaks, but of normal structure. Its weight was seven and three-eighths ounces. The kidneys were moderately supplied with fat, markedly hyperæmic, but all the structures could be made out clearly to be of normal condition. The left kidney was somewhat larger than usual. The capsule was non-adherent in both instances. The left kidney weighed seven and a quarter ounces; the right weighed five and a quarter ounces. The bladder was somewhat contracted; it was firm and contained about three ounces of clear urine. The bladder-wall and mucous membrane were normal in all respects. The prostate was rather firm but not enlarged. The urethra, testes, &c., were normal.

It had been my purpose to make a fuller anatomical and anthropometrical investigation upon the assassin, but the peculiar circumstances which arose in the matter of the disposal of the body and the anxiety of the prison warden to put the body under earth forced me to conclude my researches after having obtained the most essential data for purposes of record and future study.

The results of the necropsy can be summed up by saying that Czolgosz was in excellent health at the time of his death. There was, of course, a marked condition of hyperæmia of all the viscera, and the blood was considerably altered in that it remained fluid, doubtlessly due to the destruction of the fibrin-ferment, or of the fibrinogen, or both. These phenomena, as also the seemingly tetanised condition of the heart, have been observed by E. C. Spitzka, Carlos F. Macdonald, Van Gieson, and E. W. Holmes[6] on criminals executed by lethal currents of electricity. The external appearances of the body of the assassin, especially the facial expression, have been admirably described by Murat Halstead, who happened to be present, in a short but vivid account of the necropsy entitled, "Czolgosz after Death."

> The spectacle was interesting. The assassin had been dead but a few minutes and was lying at full length on his back on the table provided for the surgeons, his body white as marble, his face not at all distorted. One might say he was as if sleeping, but that would not describe the expression of the features, though that was almost of perfect repose. The head rested on the back part of the table so as to elevate the chin and allow the forehead to slope downward. There was no sign of a great agony; the hair had not been removed for the electrode, but was full of water from the sponge, and in disorder. If there was any mark on the head made by the deadly shock it was not visible. There was a red blotch on the right leg below the knee. ..... The strong throat, with a distinct Adam's apple, was prominent. The lips were slightly parted with more than the curl they had in life. ..... There was nothing in the appearance of the body of the emaciation from imprisonment so often referred to. Any physician would say the corpse was that of a well-nourished young man. The figure was of good proportions, his limbs especially so. The arms were not muscular. Evidently he was not a man who had cultivated his muscles by exercise or expanded them by labour. The arms were of a young man of leisure—smooth, round, and fair. His hands were not in any way notable. He had high insteps, neat ankles, and long toes. The muscles of the legs were better developed than those of his arms, indicating he was swift of foot. He was not noticeably spare in body; his chest was round and symmetrical—not lean—but the ribs quite distinct. With his head thrown back, it seemed to have been well poised in life, more so than is shown in his pictures—all of which that are familiar having been taken in prison. Nothing in his face or his person gave indication of heavy feeding or drinking, or of evil indulgence. There were none of the inevitable traces of confirmed dissipation.

The question as to whether the body of Czolgosz invested a healthy mind opens up a wide topic for discussion which it is not entirely in my province to pursue. So far as our knowledge of the correlation of brain-structure and brain-function extends, nothing has been found in the brain of this assassin that would condone his crime for the reason of mental disease due to intrinsic cerebral defect or distortion. The weight of the brain, though by itself unimportant, when considered in its other relations points to a good condition of the organ. Divested of its membranes, dissected, drained, and after being immersed in a salt solution for several hours, its weight was 1415 grammes, a trifle less than 50 ounces. This weight is even a little over the average. Giltschenko[7] records observations upon the weight of 102 Polish brains, the average being for males 1397·8 grammes, with an average stature of 168·12 centimetres. The development of the fissures and gyres from a morphological point of view had taken place in the direction usual in ordinary average brains. There were no marked evidences of arrested development or of pithecoidal anomalies. Generally speaking, this brain did not exhibit that especial kind of asymmetry of gyral structure in the cerebral halves that is so characteristic of the brains of highly endowed individuals. There were many features in the one hemisphere that were reproduced almost exactly alike in the other. The few peculiarities encountered in the course of the fissures, such as the confluence of the left pre-central, by its anterior ramus, with the super-frontal, across the medi-frontal gyrus; or the separation of the right cephalic para-central limb from its stem, while at the same time the inflected joined the para-central (a feature found by me in nine out of 160 hemi-cerebra in which the inflected was present)," and also the smallness of the cuneus, are insignificant so far as individual brains are concerned.

The skull was not symmetrical, but the asymmetry was

[4] Dr. Carlos F. MacDonald: The Infliction of the Death Penalty by Means of Electricity; being a Report of Seven Cases, with Remarks on the Methods of Application and the Gross and Microscopical Effects of Electrical Currents of Lethal Energy on the Human Subject, 1893.

[5] The "hearty breakfast" so graphically described in most newspapers was but a figment of the imagination.

[6] The Anatomy of Hanging, with a Report of the Electrocution of Fritz Meyer at Sing Sing (now Casining).—Pennsylvania Medical Journal, July, 1901.

[7] Das Gewicht des Gehirns und einzelner Teile desselben bei verschiedenen Volksstaemmen Russlands. Nachrichten der Königlichen Gesellschaft der Freunde der Naturkunde, Anthropologie, und Ethnologie an der Universität Moskau, Band xcv. Arbeiten der Anthropologischen. Sektion B. 19, Moskau, 1899, pp. 99-220. (Russian.) Ref. in Jahresbericht ueber Fortschritte der Anatomie und Physiologie, 1899, Band v., pp. 455-458.

[8] The Mesial Relations of the Inflected Fissure: Observations upon 100 Brains. Proceedings of the Association of American Anatomists, 1901, pp. 105-115, New York Medical Journal, Jan. 5th, 1901, pp. 6-10.

slight and fully within the normal range of variation. An absolutely symmetrical skull probably does not exist.

It is a probable fact that certain oft-mentioned aberrations from the normal standard of brain-structure are commonly encountered in some criminal or degraded classes of society, and those who have attempted to found a school of degeneracy have endeavoured to explain crime and social wickedness as due to the "accidental persistence of lower types of human organisation." But these structural anomalies, so far as they have been described in the brains of criminals, are too few and too insufficiently corroborated to warrant us in drawing conclusions from them. Various perversions or anomalies of mind may exist in this class without presenting a uniform criminal type, either from the sociological or the anatomical aspect. Of course, it is far more difficult—and it is impossible in some cases—to establish sanity upon the results of an examination of the brain, than it is to prove insanity. It is well known that some forms of psychosis have absolutely no ascertainable anatomical basis; and the assumption has been made that these psychoses depend rather upon circulatory and chemical disturbances. So far as this question touches upon the brain and body of Czolgosz, there have been found absolutely none of those conditions of any of the viscera that could have been at the bottom of any mental derangement. Taking all in all, the verdict must be: "Socially diseased and perverted, but not mentally diseased." The most horrible violations of human law cannot always be condoned by the plea of insanity. "The wild beast slumbers in us all. It is not always necessary to invoke insanity to explain its awakening."

In conclusion, I wish to express to Dr. Carlos F. MacDonald my appreciation of, and thanks for, the exceptional opportunity afforded in the performance of this necropsy.

OVARIAN TUMOURS AND OVARIOTOMY DURING AND AFTER PREGNANCY.

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IN the Cavendish Lecture for 1897[1] Sir John Williams showed that ovariotomy had proved as successful during pregnancy as apart from pregnancy, whilst the mortality associated with obstetric operations undertaken in cases of labour complicated by ovarian tumour was appalling. Mr. J. Bland-Sutton[2] gives in the first of his three lectures delivered before the Medical Graduates' College and Polyclinic a graphic description of two cases of labour. In the first the fœtus was extracted through an incision in the uterus and was saved; then the tumour, which lay in the pelvis, was removed and the mother recovered. In the second the tumour was pushed up, the child was delivered with forceps and was lost, whilst on the third day ovariotomy was performed after septic peritonitis had set in and the patient died. Since those authorities wrote the above observations Dr. Orgler of Breslau has prepared a most exhaustive treatise on ovarian disease and ovariotomy in pregnancy.[3] After an abstract of previous clinical and statistical records he places before us a valuable table of 148 cases of ovariotomy during pregnancy reported between 1889 and the beginning of 1901, excluding all reports which are valueless or even likely to mislead on account of important omissions. The conclusions deserve brief notice. Only six mothers were lost (a mortality of 4 per cent.), but in only four was the fatal result clearly caused by the operation, as in one case death was due to criminal abortion during convalescence from the ovariotomy and in one the patient survived the operation three months and the cause of death was not reported. The four remaining deaths make the mortality only 2·7 per cent. Subtracting the two mothers lost not directly through the operation pregnancy was interrupted in 36 out of 146 cases (24·7 per cent.), "interruption" including not only abortion and premature labours but also the four maternal deaths from operation. Thus in 110 cases pregnancy was uninterrupted. 49 were specified as having been delivered at term and some of the remaining cases were lost sight of before delivery. Amongst the 36 interrupted pregnancies, besides the four deaths, was one case of criminal abortion not fatal to the mother, two of the induction of premature labour by obstetricians, and one of vesicular mole pregnancy. Thus, 32 cases remain where untimely conclusion of the pregnancy was due purely to the operation (22·5 per cent.). In 30 cases the ovariotomy was double; in 24 of this group pregnancy was not interrupted and the remaining six included one case where the mother died. In all the 148 cases, excepting seven, the ovariotomy was abdominal. The minority was made up of vaginal operations; in two of them the pregnancy was interrupted, in two it was specified as proceeding to term, and in the remaining three it was simply recorded as continuing after convalescence. Dr. Orgler shows that when ovariotomy is postponed till after labour abortion occurs in 17 per cent. of well-observed cases. Since the appearance of this valuable monograph Dr. J. B. Hellier of Leeds[4] has published three cases, in none of which was the pregnancy interrupted by the operation, but in one done at the sixth month a stillborn child was born at the eighth month. In October, 1901, Dr. Herbert R. Spencer[5] read before the Obstetrical Society of London notes of a fatal case of rupture of a large ovarian cyst in the first week of the puerperium. The patient had refused operation and she died just after arriving at the hospital.[6] Lowenberg[7] reports a case of acute torsion of the pedicle in the third month; double ovariotomy was performed. On the thirty-fourth day, the date at which the report ends, there was no sign of abortion. M. Puech[8] reports a case which shows, what we must always bear in mind, the perils of labour when ovarian tumour is present. The patient, a primipara, aged 26 years, was confined at term. The labour was lingering and a soft, non-fluctuating tumour filled the greater part of the pelvis. The cervix lay high up against the pubes, and a foot presented and was drawn down. At the end of two hours labour had made no progress. The tumour was tapped for diagnosis, Cæsarean section being proposed. Over 600 grammes of a puriform fluid came away. Then delivery was effected, but the child, a very big male, died during extraction. Three months later Puech successfully operated, removing a large dermoid of the right ovary full of hair and grease. Dr. J. M. Munro Kerr[9] reduced a dermoid cyst obstructing labour by pushing it out of the pelvis, the patient being under chloroform. The attempt did not succeed until the head was disengaged; then the forceps was applied and the child was extracted. Five weeks later the tumour was successfully removed.

M. Puech and Dr. Munro Kerr can justify their procedures by the results which followed. None the less do both cases teach that it is always best if possible to remove a dermoid cyst during pregnancy and many experienced operators question if it be not best to operate during labour when any kind of ovarian tumour causes obstruction. Otherwise it may be damaged by pushing and handling and may become infected in the puerperium, an accident not rare even when the tumour has not caused obstruction. Thus whilst Mr. Bland-Sutton was forced to operate, in his second case related above, on the third day of the puerperium when infection had set in, and lost the case, I likewise had to operate in a case which will presently be related two months after delivery and puerperal infection of the cyst, which had not obstructed labour. This case, too, did not end in recovery.

The most recently published instance of ovarian tumour associated with gestation is among the most remarkable within the whole literature of the subject. Dr. F. W. N. Haultain[10] attended a woman in her third labour which, when he first saw her, had lasted for 24 hours. As a soft

[1] THE LANCET, July 17th, 1897, p. 129.
[2] The Surgery of Pregnancy and Labour complicated with Tumours, Lecture I., THE LANCET, Feb. 9th, 1901, p. 362.
[3] Zur Prognose und Indication der Ovariotomie während der Schwangerschaft, Archiv für Gynäkologie, vol. lxv., 1901, p. 126.
[4] THE LANCET, Dec. 21st, 1901, p. 1727.
[5] Transactions of the Obstetrical Society of London, vol. xliii., p. 224.
[6] An instance of rupture during pregnancy is reported by Fothergill in the Transactions of the Edinburgh Obstetrical Society, vol. xxvi., 1901, p. 114—"A Case of Pregnancy with Ovarian Cyst." Collapse and abortion followed the rupture, then septic infection and removal of placental tissue. A month later an operation was proceeded with during a sharp attack of peritonitis. Recovery ensued.
[7] Centralblatt für Gynäkologie, No. 51, 1901, p. 1389.
[8] Kyste Dermoide de l'Ovaire compliquant l'Accouchement, Gazette des Hôpitaux, Dec. 17th, 1901.
[9] Dermoid Cyst of Ovary obstructing Labour, Transactions of the Obstetrical Society of London, vol. xliii., 1901, p. 145.
[10] Expulsion of a Dermoid Ovarian Cyst during Labour, Journal of Obstetrics and Gynæcology of the British Empire, February, 1902, p. 243.

mass had been felt bulging through the posterior vaginal wall an attempt at delivery by means of forceps had been made, with the result that the mass protruded through the vulva. The mass, which proved to be an ovarian dermoid cyst, became detached as Dr. Haultain explored it. After delivery was effected by the forceps the rent in the vagina was packed with gauze; the patient recovered.

Thus the most recent records only confirm the prevalent teaching that an ovarian tumour detected during pregnancy should be removed, that its removal may be the best course during labour, and that a tumour of this kind is liable to undergo in the puerperium prejudicial changes which indefinitely increase the dangers of operation. This latter teaching is strongly supported by my own operative experience which I will now relate.

OVARIOTOMY IN PREGNANCY.

I will begin with two cases of ovariotomy during pregnancy in my own practice. In the first all complications and dangers were anticipated, none existing at the date of the operation. In the second torsion of the pedicle occurred and the tumour lay in a position prejudicial to labour. In each case the complication had been diagnosed by the patient's private medical adviser who foresaw danger.

CASE 1.—A patient, aged 29 years, who was under the care of Dr. S. T. Plumbe of Maidenhead was sent to me in June, 1897, on account of the discovery of a tumour, pregnancy being evident. She had been married for eight years and had borne three children—the youngest was two and a half years old—and there had been no abortions. The catamenia had been absent for 15 weeks. In November, 1896, the patient first noticed an abdominal swelling, with much dull pain. Dr. Plumbe had recently examined her and had detected a tumour and a pregnant uterus distinct from each other; the former had grown larger since the cessation of the catamenia. I found a freely moveable spherical cyst, as large as a big orange, rising above the right groin. On its inner side was the gravid uterus, the fundus rising three inches above the pubes. The cyst could be perfectly separated from the uterus and pushed to the right or upwards. No part of the tumour came down into the pelvis. There could be no doubt about the diagnosis. I had seen some bad cases where pregnancy had recently occurred, cases which will presently be referred to. It was clear that an ovariotomy would be simple if performed at once; if delayed, on the other hand, several painful or dangerous complications were highly probable. The cyst, for example, might easily have fallen behind the uterus, as happened early in the history of the next case. Then there would have been a dermoid cyst obstructing labour, a complication entailing several obvious dangers. The patient was very strong and healthy. The pulse was 84 and the temperature was 98° F. I therefore operated on June 17th, 1897. I exposed a dermoid cyst. On account of the nature of the tumour I enlarged the incision and extracted it entire. It is very inadvisable to sponge, mop, or flush the peritoneum in a pregnant subject, yet such procedures are absolutely necessary if dermoid matter fouls that serous cavity, and such an accident is always possible however carefully the trocar is manipulated. The pedicle was three inches long; anatomically it was normal and untwisted. I ligatured the ovarian vessels and then transfixed and tied the entire pedicle which was not broad, and I took care not to tie the ligature close to the uterine cornu. The left ovary and tube were healthy. The lower border of the great omentum had been pushed up by the tumour and was adherent to the parietes; I removed it in part after careful ligature. I closed the parietes with interrupted silkworm-gut sutures, after bringing the recti and their sheaths together with continuous catgut. The tumour contained dark-brown hair, grease, and a flat piece of bone.

The after-history of the case was that the patient made a good recovery and was delivered spontaneously on Dec. 11th, 1897, of a female child. She has borne one more since that date. I will presently speak of a remarkably similar case where I had not the opportunity of operating till after the puerperium.

CASE 2.—The patient, a married woman, aged 25 years, was sent to me by Dr. R. Purdie of Haverstock Hill on Oct. 1st, 1901, he having diagnosed pregnancy complicated by a tumour. The patient, who was married in December, 1899, was delivered of a child at term in November, 1900. Dr. Purdie used the forceps, not on account of any obstruction, but because he found the patient somewhat exhausted, whilst the pains were ineffectual and the head was arrested in the perineum. There was no difficulty in delivering the child. Recovery was rapid; the child was suckled for seven months, and the patient menstruated twice (in February and in April, 1901) during lactation. The periods did not re-appear after the first week in April, 1901. Early in August the patient had a sharp attack of abdominal pain which laid her up for two or three days. About a week later she had another attack which laid her up for a week. Since then she had no more pain, permanent or temporary. Dr. Purdie had already discovered a pelvic tumour by accident when examining her at the beginning of this pregnancy. I examined her on Oct. 1st when she was admitted into the Samaritan Free Hospital. Of the pregnancy there could be no doubt. The soft gravid uterus rose to above the umbilicus. The cervix was soft and lay high in the pelvis. In Douglas's pouch and the left fornix lay a firm mass quite immoveable. On bimanual palpation its upper limits could be indistinctly defined behind the left border of the uterus in the left iliac fossa. The patient was put under an anæsthetic, and then the presence of some kind of tumour could be more clearly defined. It was separate from the uterus and it pushed the cervix upwards and forwards—in other words, it obstructed the inlet. The tumour seemed to be absolutely fixed and was very firm. Owing to its position palpation from above and below simultaneously was not easy, so that it remained uncertain whether it was solid or cystic. Attempts were made to push up the tumour gently; it was fortunate that not much force was used. Dr. C. Hubert Roberts, Dr. F. J. McCann, Dr. C. H. J. Lockyer, and Dr. R. H. Bell examined her at a consultation. An exploratory operation was considered preferable to expectant treatment.

I operated on Oct. 15th, Mr. A. C. Butler-Smythe assisting. I exposed the pregnant uterus, passing my hand into the left iliac fossa. I detected a tumour which I partly set free from soft vascular adhesions. I object to working too much in the dark in any case, and in this instance I wished to avoid bursting the cyst (it felt clearly cystic), as wiping up fluids and flushing the peritoneum greatly add to the chances of premature labour. I therefore enlarged the incision and drew the gravid uterus forwards out of the abdominal cavity. Then I saw that the left appendages were perfectly normal. The tumour was the right ovary dilated into a small pyriform cyst and displaced to the left. Its pedicle, twisted two turns, was stretched tightly across the back of the uterus. At the twisted part the pedicle was no thicker than a No. 3 catheter and on the distal side it was full of organised clot. I transfixed, tied, and divided it. The adhesions in Douglas's pouch and at the back of the uterus bled a little. The bleeding was checked by pressing sponges down into the pelvis from which a few clots were removed. Then the uterus was reduced and the abdominal wound was closed.

The after-history of the case is as follows. The patient, a healthy young woman free from neuroses, showed no sign of shock, and flatus passed within 24 hours. On the fourth day the bowels were moved freely by a dose (one drachm) of sulphate of magnesia followed by an enema. As is usual when the pedicle has been already twisted, there was no local pain, since the tension following the ligature of a broad normal pedicle did not exist. Not the least sign of uterine contraction or of bloody or any other discharge was observed. The patient left the hospital quite strong on Nov. 6th. Until her confinement she enjoyed good health and could attend to her ordinary housework without inconvenience. On Jan. 8th, 1902, she was delivered spontaneously of a living and well-developed female child. Thus the operation did not hasten labour which, calculating from the first week in April, took place precisely at term. Dr. Purdie informed me that the head was on the perineum when he arrived, so that he had no opportunity for an examination. Labour was easy and the abdominal wound looked perfectly well and showed no sign of stretching.

This case offers two special points for comment. In the first place, attempts to push up an ovarian tumour are objectionable, and I was not in favour of such a practice even in this instance; tapping is equally inadvisable. Semon of Dantzig[11] detected a tumour in the pelvis in the third month of pregnancy, and in the sixth month he operated. The tumour was a prolapsed kidney, which it was

[11] Monatsschrift für Geburtshülfe und Gynäkologie, October, 1901, p. 589.

thought advisable to remove. Pushing or tapping might have caused grave results. Mr. Bland-Sutton[12] insists in his lectures already alluded to that pushing an ovarian tumour out of the pelvis during labour is "decidedly in opposition to all the canons of surgery." In the second place, I wish to insist on the necessity of drawing the uterus well out of the abdominal incision when there is the least doubt of what is behind it. There is little chance of causing abortion if the uterus be well protected with pads anteriorly; but if the uterus be not drawn out the operator will be forced to keep moving his fingers behind it for some time and to drag unnecessarily on the appendages—manœuvres well calculated to set up uterine contraction.

OVARIOTOMY AFTER PREGNANCY.

The result of operating in these cases was quite satisfactory. I find 15 cases of ovariotomy performed by myself where pregnancy had existed recently and the tumour was known to be present before labour. I exclude about three times as many cases where pregnancy had occurred within three years of the operation but where, when no complications were present, it was probable that the ovarian tumour had developed after the last labour and where when complications were present they might have developed later than the last puerperium even if the tumour had actually existed during the last pregnancy. Out of the 15 no complications (twisted pedicle, adhesions, &c.) were found at the operation in three. But in one of these abortion at the third month had occurred six months before I operated, and the cyst was then very large. Another case aborted in the middle of the fourth month from twisted pedicle. Thus there were two abortions in 15 cases. In two cases the patients had been twice pregnant since the diagnosis of the tumour. In eight cases, including the patients who had been pregnant twice, delivery was normal and at term, in one lingering at term, and in two instrumental at term. In two cases delivery was premature; in one of these labour, which took place at the seventh month, was very lingering, and severe peritonitis followed. I operated within three months and found the pedicle twisted and strong visceral and parietal adhesions. In one of the two cases in which the patients were known to have been pregnant twice the pedicle seems to have twisted slowly during the second puerperium with little or no pain. There were strong adhesions. The second case looked worse in this respect than it proved to be when I operated six months after the last confinement. The patient in this case was 25 years old and had long refused operation. The tumour was detected on the left of the uterus by Dr. W. I. Watson of Wellingborough during the first pregnancy, which ended normally, two years and one month before I removed it. Strange to say, though the tumour retained its position on the left side of the abdomen through both pregnancies and could not be pushed to the opposite side, I found that it was perfectly free from adhesions and bore a moderately long pedicle. It contained four pints of clear ovarian fluid and only weighed six and a half ounces. The history led one to suspect that it must be held to the left by adhesions. In no less than 11 out of the 15 cases I found the pedicle distinctly twisted and in six of the 11 the tumour was a dermoid. In one the pedicle had yielded and the tumour was nourished by omentum. The tumour had been diagnosed one month before her last delivery which occurred at term 11 months before I operated. The patient, who was 29 years of age and had borne seven children, suffered little from her tumour which held 14 pints of dark-brown ovarian fluid. In five of these 11 cases there was no further complication besides the twisting of the pedicle; the case of yielding of the pedicle is included in the five, and in the other six cases the patients suffered the usual painful symptoms of axial rotation. In seven out of the 15 cases I found strong adhesions; in six of the seven the pedicle was twisted, so these six also come under the last heading. In one of the seven cases the pedicle was not twisted; the operation was performed three months after delivery at term. There was a strong parietal adhesion, hard to reach and to separate close to the liver, and the cyst wall was dull through plugging of its vessels, but the contents were clear and sweet. In six cases the separation of adhesions gave great trouble, especially in the case of one patient who had been pregnant twice during the existence of the tumour, mentioned above as an example of painless twisting of the pedicle, yet the adhesions showed that extensive peritonitis had occurred. In one of the six cases the operation was followed by fatal results, making one death in 15 cases. A live child had been delivered at term with the forceps; the tumour was not apparently impacted in the pelvis, but it seems to have been roughly handled. As in Mr. Bland-Sutton's case, related above, it became infected during the puerperium two months before operation. Under the care of Dr. H. J. Ilott of Bromley the patient improved a little, but the temperature remained high and she was very sickly when I operated. I found universal adhesions, involving the parietes, the omentum, the ascending colon, the cæcum, the vermiform appendix, the bladder, the opposite tube and ovary, and especially several coils of small intestine, which were deeply injected. The pedicle was strongly twisted and the cystic fluid was very fœtid. The peritoneal cavity was flushed with saline fluid after careful repair of the damaged serous coat of one of the separated coils of small intestine. The patient died on the sixth day after the onset of symptoms from bacillus-coli infection—sickness, free passage of fœtid flatus, diarrhœa,[13] and tympanites, a complication frequent after separation of intestinal adhesions in ovariotomy where malignant or strongly adherent dermoid tumours are removed. This case was an eminently instructive example of puerperal infection of an ovarian cyst. Any pregnant woman with a cyst has this danger in prospect—a fact never to be overlooked in dealing with a pregnancy thus complicated. Another of the six cases where adhesions were dense is instructive on account of its strong resemblance to Case 1, where I operated during pregnancy. The patient was 30 years of age and had borne two children, and she was very strong and healthy. When I operated she had been delivered at term six months previously, and Mr. Chune Fletcher informed me that she had suffered from retroversion of the gravid uterus during the last pregnancy. Acute abdominal pain set in shortly after convalescence from the puerperium. The tumour was a dermoid closely packed with greasy hair and dull red fluid mixed with half liquid fat came away on tapping one loculus. There were very intimate adhesions to the parietal peritoneum over the bladder and to the peritoneum of the right iliac fossa. The pedicle was tightly twisted for two turns, and therefore it was easily secured and divided; then I found that the lowest part of the tumour was adherent to the front of the uterus and to some small intestine. This adhesion had to be transfixed and tied as though it were a pedicle. The peritoneum was thoroughly flushed with saline solution, some of which was left in when the abdominal wound was closed. The patient made a good recovery. Had I waited to operate on Case 1 till after labour similar complications might have been very probably encountered. Let it be noted that in both the tumour was a dermoid, full of grease; that twisting of the pedicle is exceedingly frequent in the puerperium, as the above records show; that dermoids are specially liable to this accident; that bad adhesions often follow torsion; and that separation of the wall of an adherent dermoid always involves distinct risk. Thus in 15 cases with a very clear history of recent pregnancy the proportion of complications, obstetrical and operative, was very high. This experience supports Dr. Orgler's conclusion that postponing the operation till after delivery exposes the mother to considerable danger during pregnancy, labour, and, above all, the puerperium.

Granville-place, W.

[12] THE LANCET, Feb. 9th, 1901, p. 382.

[13] See Vautrin: L'Infection Colibacillaire en Chirurgie Abdominale, Revue de Gynécologie et de Chirurgie Abdominale, November–December, 1901, vol. v., p. 935.

FOUR CASES OF WORD-BLINDNESS.

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I HAVE already published in the columns of THE LANCET[1] five different papers dealing with varieties of word- and letter-blindness, in which certain views have been expounded in explanation of the highly interesting but often complex phenomena which are met with in these cases. These views, though speculative in character, are based entirely upon the

[1] THE LANCET, Dec. 21st, 1895, p. 1564; Nov. 21st, 1896, p. 1451; Feb. 12th, 1898, p. 422; Jan. 14th, 1899, p. 83; and May 26th, 1900, p. 1506.

facts of clinical experience and they afford, in my opinion, the most reasonable explanation yet offered of the strange varieties of clinical phenomena met with in these conditions. The four cases which form the subject of the present paper have been seen by me in consultation during the last year and illustrate in a very graphic manner many interesting points in connexion with word- and letter-blindness. No attempt, however, will be made to discuss each case in detail, as this would lead to a repetition of what has been done already in previous papers. I will, in the first place, simply narrate the cases without comment and afterwards will discuss only those special features of each which hitherto I have been unable to illustrate by such excellent clinical examples as these cases afford. It will be seen that many important facts observed in these cases strongly confirm the views developed in detail in previous papers on this subject.

CASE 1.—Three years ago a man, aged 34 years, had an attack of left hemiplegia with paralysis of the left side of the face, from which he had been gradually recovering and now scarcely any trace of this remained. Ever since the hemiplegic attack he had suffered from severe pain above the right eye, which disappeared about a week before his aphasic attack came on. On July 5th, 1901, about midday, whilst at his work, he became completely aphasic. There had been very little warning before the attack, although in the morning he had said to his brother that he did not feel quite well. There was no unconsciousness or motor paralysis. His aphasia was at first complete, both motor and sensory. He could not speak and was completely word-blind and word-deaf, so that he was entirely cut off from communication with others. He could not express the simplest idea or simplest want, nor could he interpret any communication made to him by others either in writing or by speech. There had been a gradual improvement in every respect as to the motor, visual, and auditory aphasia, and when I first saw him (on the 12th) all these defects were only partial and a considerable improvement had taken place. With regard to his speech he had still some aphasic defect, but he could express all his wants and ideas, although imperfectly. He was very frequently at a loss for the proper word, only getting it after considerable pauses and hesitation, and he often used a wrong word. With regard to the auditory aphasia there were still traces of it present. He understood on the whole what was said to him, but it seemed to require considerable effort and mental concentration on his part to grasp the meaning of what was said to him. He often asked one to repeat a sentence and sometimes did not seem to grasp clearly the exact significance of a question or statement. The word-blindness was the symptom which had persisted in the most marked degree and regarding which he had been sent specially to consult me.

On examination I found that there was no letter-blindness. He read all the printed and written letters very fluently with an occasional mistake, which, however, he could always correct himself. With regard to printed words there was considerable word-blindness, but not complete. He could not read any continuous sentence, but he could pick out here and there words by sight, especially the smaller and more familiar words, but the longer words always puzzled him and he was unable to read them by sight. If one allowed him to spell them out letter by letter he could, as a rule, name the word, but was unable to do so when restricted to the use of sight alone. With written words the word-blindness was still more marked. He could only pick out very few of the written words by sight and he himself was aware that he had greater difficulties with written than with printed words. The patient being a highly educated man and knowing Greek, Latin, and French, I tested him as to his power of reading each of these languages. Greatly to his own surprise I found that he read Greek correctly and with very little difficulty. I tested him with passages from Thucydides, Homer, and Xenophon, and he read them all correctly. He read somewhat slowly, making very few blunders, which he always corrected at once himself. On testing him with Latin I found that though he did not read this so correctly as the Greek, he read it much more fluently and correctly than the English and that he was able to recognise by sight a much larger number of words. Many long Latin sentences he read without a pause, only now and again he failed to recognise a word by sight and had to spell it out letter by letter. French he did not read so well as Latin, but he read it better than English, being able to pick out by sight alone a much larger number of words. Thus of the four languages which he knew his word-blindness extended only to three of these, his power of reading Greek remaining intact. Of the three languages affected—viz., Latin, French, and English—the degree of word-blindness was not the same in each, being greatest with English, less with French, and least of all with Latin. In the last tongue the word-blindness was only very partial and he was often able to read whole sentences without a mistake. He read numbers with perfect fluency and correctness, both individually and in the most complex combinations. He performed sums in addition and subtraction correctly, but failed with multiplication and division, seeming to have great difficulty in remembering the multiplication table. He read musical notes as fluently and correctly as ever he did, without manifesting the slightest hesitation. He wrote to dictation, but not with perfect fluency and correctness. He evidently did so with considerable difficulty and made a good many mistakes. There was no ocular symptom or defect. There was no change in the visual fields and no abnormality in the fundus of the eye. The pupils were equal and the pupillary reactions were normal. The knee-jerks were active and there was no paralysis or paresis. The occurrence of these cerebral symptoms in a young man, 34 years of age, with healthy heart and kidneys, and the history of the antecedent attack of hemiplegia three years before, made me strongly suspect syphilitic disease of the cerebral blood-vessels and he was put upon an energetic course of specific treatment, both mercury and iodide of potassium. He was strongly urged to take complete cerebral rest. I saw this patient again on August 27th after an interval of about six weeks and found that there had been a continuous improvement as regards his word-blindness. Printed and written English words were now read with perfect correctness, though somewhat slowly and with evident effort. If he made an occasional mistake he always corrected himself when his attention was called to it. A similar improvement was found in his other languages. He read French, Latin, and Greek more rapidly and fluently than before. The patient informed me that the reading of Greek and Latin did not require such a great mental effort as the reading of English and did not take nearly so much out of him, as he expressed it. When I saw him finally (on Sept. 26th) all trace of word-blindness had disappeared and he now read English as rapidly and fluently as the other languages, but he still maintained that it required a greater mental effort and greater mental concentration to read English than to read Greek and Latin, both of which he read with a greater sense of confidence and ease. There had been a continuous improvement in his condition in other respects also. He was now much better at arithmetic and performed sums in multiplication and division fairly well, although somewhat slowly. He wrote to dictation more rapidly and with fewer mistakes, but still not with perfect correctness. There was also marked improvement with regard to speech, but traces of his aphasia still occasionally manifested themselves. Sometimes he spoke very fluently, but now and again he was at a loss for the proper word. Traces of his word-deafness were also manifest in his occasional difficulty in clearly apprehending what was said to him, necessitating the repetition of a statement. He had continued his specific treatment steadily during all this period.

CASE 2.—On the evening of July 10th, 1901, a man, aged 57 years, came home from business, had tea, looked over the newspapers according to his usual custom, and then went to the bowling green. Whilst engaged at the game he felt something wrong with his vision, had some difficulty in seeing the mark, and suffered from a slight frontal headache and some mental confusion. He managed, however, to finish his game without interruption. When he got home he took up the newspaper before going to bed, but found that he could not read it. He got up on the following morning feeling all right and took a good breakfast. After breakfast he took up the newspaper again, but found that he could not read a word, and so at his daughter's request his medical attendant, Dr. David Watson, was sent for, who took me along to see his patient two days after the onset of his trouble.

On examining the patient with the test-types on July 12th I observed that he always carried the test-card well to the left of the middle line before he attempted to read it. I therefore at once examined his visual field and found that the right half of each visual field was absent—i.e., he

had right lateral homonymous hemianopsia. It was found on further examination that the patient was word-blind but not letter-blind so far as printing was concerned. He read printed letters fairly well with an occasional mistake, which he always corrected himself after a little hesitation. He could not read words, however, unless he was allowed to spell them out aloud letter by letter. He could then name the word by appealing to his auditory memory. He could not read words by sight unless in the case of a few short familiar words which he was able to pick out without spelling, such as his own name, *the*, *to*, *on*, *in*, &c. His word- and letter-blindness was much more complete to written than to printed characters. He did not read the individual written letters with anything like the same fluency or correctness with which he read the printed ones. He made numerous mistakes and often found it impossible to name an individual written letter. He was absolutely word-blind to written words, not being able to read by sight even the smallest and most familiar words. He could read numbers fairly well with an occasional mistake, which he was able to correct himself if he got time; the more complex the number the greater the difficulty he experienced. Groups of numbers up to tens of thousands he read fairly correctly, but in dealing with hundreds of thousands and millions he become somewhat confused. He performed simple sums mentally fairly well. He wrote correctly to dictation, but could not read what he had written. His wife informed me that the day after the occurrence of the word-blindness he wrote a letter to her at the coast, written and spelt quite correctly, as if there had been nothing wrong with him. There were no speech difficulties whatever to be made out on the most careful examination. The patient's general health had been good. In the course of his business he consumed a fair amount of alcohol each day, but without becoming intoxicated. He had occasional epileptic fits for three years after his marriage, but none since. His vessels were atheromatous. His knee-jerks were exaggerated, but no other nervous symptom was discoverable. I re-examined the patient two days later. On taking the visual field I found that the hemianopsia had largely disappeared, although the right half of each field was still considerably constricted. The patient showed decided improvement in reading printed letters and words. He read the letters more rapidly, with less hesitation and with fewer mistakes. With regard to printed words he also showed improvement. Although unable to read a sentence by sight alone he was now able to read by sight a greater number of words than formerly. He had made marked progress in the reading of written letters since his last examination. Two days before he could recognise correctly by sight only very few written letters, being almost completely letter-blind for writing, but on this occasion he read all the written letters quite as readily and as fluently as the printed ones. He had made scarcely any progress with regard to written words and was practically completely word-blind in this respect. He read numbers even more fluently and correctly than on the last occasion. The last time he read fairly up to tens of thousands, but he could now read quite fluently up to millions. He felt quite well, slept well, and had no headache. His wife informed me that his memory showed no signs of impairment in other respects. He had given them many minute instructions about his business, which showed that the acuteness of his memory for facts was unimpaired. Ever since that date I have examined the patient at frequent intervals. The constriction of the visual fields gradually became less, and on August 21st both visual fields were found to be normal. There was a gradual improvement in his powers of reading. This improvement was most rapid in the case of printed words and much slower in the case of written words. The number of printed words which he could read by sight steadily increased until on the 21st, about six weeks after the onset of his trouble, he was able to read sentences from the newspaper, but very slowly and with mistakes, which he was always able to correct when his attention was called to them. A month after this (Sept. 17th) he was reading even more fluently than before and with fewer mistakes. Still his reading was not normal. It was only accomplished very slowly and deliberately and evidently with great mental effort. He made steady improvement also in his power of reading written words, but his progress here was much slower. On the 17th I found that he had much greater difficulty with written words and made more numerous mistakes. He himself was well aware of this. He read all combinations of numbers fluently. He performed arithmetical problems with increasing rapidity and correctness, but still he made mistakes, especially in multiplication and division, and his results, though often correct, could not be relied upon. I was informed by Dr. Watson that on Oct. 31st he was back at his business and that all symptoms of his word-blindness had passed away.

CASE 3.—On Sept. 2nd, 1900, while holiday-making n the country, a man, aged 60 years, was seized, when out walking in the garden, with a "giddy attack," but he was able to get into the house without falling. Thereafter there gradually developed some mental obtuseness and some inability to see and to speak properly. There was no motor paralysis. After a week or ten days' rest in bed his recovery seemed fairly complete with the exception of a complaint that he could not see well. His medical attendant, Dr. William MacLennan, at first thought that it was his eyes which were at fault, but at the end of September, on his return to Glasgow, Dr. MacLennan found that he was suffering from letter- and word-blindness, and accordingly brought his patient to visit me on Oct. 7th. He informed me that the patient was recovering from his word-blindness and that the condition was not now so complete as when he first saw him.

On testing the patient with letters I found that he could recognise most of them. He recognised them, as a rule, only after considerable hesitancy and difficulty, but in the long run, if he got sufficient time, he named them correctly. There were curious variations in his power of naming the letters, as at one time he was not able to name a letter and then a short time afterwards he was able to do it. On testing him with words his power of reading at sight was found to be very defective. In fact, he could not read by sight a single sentence. He could pick out by sight only an occasional word here and there. Other words he could read if one allowed him slowly and laboriously to spell them out aloud letter by letter, but if one confined him to visual recognition of the words he was unable to interpret them. He read figures more fluently than words and letters, but made mistakes with them also. There was no aphasia and no general loss of memory or defect of intelligence. I saw him again 12 days later and found an improvement. He recognised the letters much more rapidly and with fewer mistakes than before, so that his letter-blindness had almost passed away, but his word-blindness remained much the same. He was put upon biniodide of mercury, and Dr. MacLennan reported that his recovery was steady, and that by the end of January, 1901, he was able to read with comparative fluency, and, in fact, that his word-blindness was practically gone. About the middle of March his medical attendant was suddenly summoned and found that the patient had had a fit. He had thereafter several severe epileptiform convulsions, not distinguishable in any way from ordinary epileptic seizures. There was no knowledge of these occurrences on the part of the patient. Recovery took place without any motor paralysis, but all the other symptoms were greatly aggravated and much worse than after the primary attack. There were now complete word- and letter-blindness and inability to read figures and to write. There were considerable mental obtuseness and general failure of memory and loss of flesh. The patient, I am informed, has remained in this condition ever since.

CASE 4.—In July, 1900, a lady, aged 34 years, became suddenly unconscious and remained so for several days. On regaining consciousness she was found to be paralysed in the right arm and the right leg and to be completely aphasic. She could neither speak nor understand what was said to her. She has gradually recovered the use of her arm and leg and of her power of speech. When I saw the patient on Sept. 11th, along with her medical attendant, Dr. Miller Semple, there was no paralysis although both knee-jerks were considerably exaggerated. There were no traces either of motor or of auditory aphasia. She expressed herself fluently and correctly and seemed to have no difficulty in understanding what was said to her. On taking her field of vision the right half of each field was found to be wanting—i.e., she had right lateral homonymous hemianopsia. She was completely word- and letter-blind both to printing and writing. The most familiar words, *the*, *of*, *to*, *in*, &c., she could not recognise, nor could she recognise a single letter of the alphabet. She could recognise very simple combinations of figures, but with occasional mistakes and often only after pausing for a time, and evidently with considerable effort. Some numbers, on the other hand, she recognised in a moment. Although, therefore, she was far from reading

numbers fluently, her power of interpreting them was a marked contrast to her complete word- and letter-blindness. She had great difficulty in naming objects shown to her—i.e., she had visual aphasia. For example, when a spoon was shown to her she could not name it, but said, "Of course, I know what it is, but cannot name it," and the same with my watch and various objects which were shown to her. I showed her also pictures of a sheep, a horse, and a dog, but she could not name any of them. There was no object-blindness, however—i.e., when she saw an object, although she could not name it, she recognised its true character and appropriate uses. She recognised her acquaintances as well as ever but could not name them. There was no loss of memory for places and she could find her way about as well as she ever could. As 14 months had elapsed since the cerebral attack, and as there now seemed to be no active disease in the brain, I strongly recommended her medical adviser to begin a course of re-education. I recommended that she should begin to learn the alphabet and to read small words just as you would teach a child to read. In fact, I have found that it is best for the patient to make use of the graduated primers which children use at school. In learning the letters I have found letter-blind patients much helped by making use of block letters, so that the sense of touch in handling the letters helps to strengthen the visual impressions and thus enables them to be acquired more rapidly. This course has been adopted, and I am informed by Dr. Semple that after two months' practice the results have been very satisfactory and encouraging, the patient being now able to recognise all the letters of the alphabet and also most of the small words in the child's first reading-book.

Of these four cases, Case 1 presents the most novel and interesting features in the partial character of the word-blindness. In the case of an individual knowing more than one language, can he become word-blind to one language alone, leaving the others intact? Or if the word-blindness extends to all the languages with which he is familiar, may it vary in degree in the case of the different languages? Case 1 is, I think, a very important one in giving a definite and affirmative answer to these questions. The facts were observed with great care and the patient, a highly intelligent and educated man, was therefore able to render every assistance in making our examinations accurate and reliable. The patient, who was familiar with four languages, English, French, Latin, and Greek, had soon discovered for himself the painful fact that he could no longer read English; but neither he nor his medical attendants had ever thought of testing his power of reading the other languages with which he was familiar. When I put a Greek book into his hand he was both surprised and delighted to find that he could read it correctly. I made him read passages from Homer, Xenophon, and the New Testament, all of which he did correctly. It was evident, then, that so far as Greek was concerned there was no evidence of word-blindness. I then tested him with Latin and found that here there were evidences of partial word-blindness, although the great majority of words he read correctly by sight. Now and again he came to a word which he did not recognise by sight and which he had to spell out letter by letter before he could interpret it. Although he did not read Latin with the absolute correctness and fluency with which he read Greek, his reading was a very marked contrast to his almost complete word-blindness for English. On testing him with French a greater degree of word-blindness was manifested than in the reading of Latin, but still it was not nearly so pronounced as that manifested in the reading of English. He recognised by sight a large number of French words, although he made many mistakes, and many of them he could not recognise at all without spelling them out letter by letter. It will be observed, however, that even with English the word-blindness was not absolutely complete and there was no letter-blindness, thus showing that the interference with the functional activity of the centre was only of a very partial character. He knew all the letters of the alphabet and could pick out by sight a word here and there, especially the shorter and more familiar words, such as *the*, *to*, *of*, &c., but he could not read a single sentence by sight. He could only read if you allowed him slowly and laboriously to spell out each word letter by letter and thus interpret the words by appealing to his auditory memory. Thus of the four languages which he could read the word-blindness extended only to three, and the degree of word-blindness was very different in each of the three languages affected, being greatest in English, less in French, and least in Latin. The Greek language had entirely escaped, and no trace of word-blindness was manifest so far as it was concerned.

These phenomena, which at first sight may seem strange and inexplicable, are in perfect harmony with our knowledge of the brain and afford yet another clinical proof of the correctness of the views expounded and developed in my book on "Letter-, Word-, and Mind-Blindness,"[2] that "all the varieties of word-blindness met with in clinical experience can be intelligibly explained by regarding them as disorders of the visual memory produced by lesions affecting more or less completely a definite area of the cerebral cortex in which are preserved these past visual impressions arranged in definite and ordered groups."

In the case of a person who is able to read several languages the letter- and word-visual images of each language will be grouped together, forming thus a series of separate groups within the centre. If the whole centre is destroyed or its functional activity abolished the individual will be word-blind to all languages, but if there is only a very partial interference with the centre then the word-blindness also may only be very partial and may be limited to a single group of these visual images—i.e., to a single language. Hence this, at first sight, singular phenomenon of an individual being word-blind to one language and not to another is just what we would expect from the views already enunciated as to the separate grouping of the visual images within the visual-memory centre.

Although this is the first case in which I have met with different degrees of word-blindness in different languages I had already met with a case in which a patient knowing two languages was word-deaf to one but not to the other. This condition, of course, is easily explained in the same way as the partial word-blindness—viz., that in the auditory memory we have the different languages arranged in separate groups, and hence in a partial lesion one group may be interfered with or destroyed whilst the others are preserved. The patient referred to was a teacher of French in Glasgow. Manifesting certain cerebral symptoms he resigned his position in Glasgow on my advice and returned to France, where he died about a year later, right-sided hemiplegia and some degree of aphasia having manifested themselves before his death. His wife wrote to me after the event and mentioned as a very curious fact that for some time before his death he could not understand French, his native tongue, but could only understand what was said to him in English; or, in other words, he was word-deaf to French but not to English. This partial word-deafness is an exact analogy to the partial word-blindness manifested in the present cases and can be explained in precisely the same way.

The records of such cases of partial word blindness are, however, exceedingly rare. In my book on Word-Blindness[3] it is stated "that there are partial cases of word-blindness, when the patients are able to read only some words and some letters. The inability to read may embrace all the different words and letters known to the patient, but this is not always so. Michel[4] quotes a case where the patient could read the Gothic but not the Latin characters. Charcot[5] records a case where the patient, knowing French, German, Spanish, Latin, and Greek, lost the memory of a few of the Greek and German characters only." The present case affords an excellent clinical example of the possibility of the visual word-memories of one language being preserved whilst those of the other languages known to the individual may be materially interfered with or even completely lost. Case 2 affords a further example of the peculiar varieties of partial letter-blindness. On my first examination there was a very marked difference between his power of reading printed and written letters. He read all the printed letters fairly well with an occasional mistake, but with the written letters his failure to read them was very striking. He read correctly a few of the written letters, but he made numerous mistakes and was quite unable to read a great number of them. In short, he could read the printed letters, but had a considerable degree of letter-blindness with respect to the written letters. As the patient's condition improved this letter-blindness to written characters rapidly passed off. I

[2] Letter-, Word-, and Mind-Blindness, London, 1901.
[3] Ibid.
[4] Berger: Les Maladies des Yeux dans leur Rapports avec la Pathologie Générale, Paris, 1892.
[5] Clinical Lectures on Diseases of the Nervous System, vol. iii., New Sydenham Society's Series.

had already called attention to the possibility of this condition in Chapter IV. of my book, where I mention a case of Bruns and Stoelting,[6] in which the patient's inability to read printed letters and words was complete, but only incomplete for written characters. This case forms the antithesis of my own. In Case 3, also, it was observed that the word-blindness was more complete with regard to written words than it was with regard to printed words.

Of these four cases of word-blindness, in one only (Case 4) did it extend to the reading of figures. In Case 1 the patient read figures with perfect fluency and correctness. In Case 2 the patient read figures with an occasional mistake and with some effort, but in a manner which formed a marked contrast to his complete word-blindness. In Case 3, although the power of reading figures was impaired, the patient read them much more correctly than words. I have elsewhere[7] discussed at length the frequency with which the power of reading figures is retained when the power of reading letters and words is lost more or less completely. These cases confirm the view of the complete functional independence of the visual memories of letters and figures and the inference which logically follows—viz., that these groups are deposited in distinct but probably adjacent areas of the cerebral cortex.

I would also call special attention to the fact that in Case 1, although the patient was word-blind, he could read musical notes as well as ever. This is the converse of the condition in which there is loss of visual memory for musical notes, whilst the patient may be able to read words and letters. Professor Edgren of Stockholm has given numerous examples of such cases and I have referred to this in some detail in a previous paper in THE LANCET.[8] This functional independence of the visual memories of musical notes and words is well illustrated by Case 1.

How is it that there are so few recorded cases of these partial forms of word-blindness? I think the reason simply is that the patient is not thoroughly examined by testing his power of reading all the characters and all the languages with which he is familiar. In Case 1, had I contented myself with observing the patient's inability to read English without testing his power to read the other languages with which he was acquainted, I should never have observed the fact that he was able to read Greek. It has been taken for granted that if a patient was unable to read one language he would, therefore, be unable to read any language, and that there was no necessity for applying further tests. In Case 2, had I examined the patient simply with printed characters, I should not have discovered his greater blindness to written characters. These cases conclusively demonstrate the fallacy of such assumptions, and the facts observed are in perfect accord with the view that our past visual impressions are arranged in the visual-memory centre in definite and ordered groups. They also teach that to examine a patient properly for word-blindness it is essential that the patient should be examined as to all the various characters, printed and written, with which he is familiar, and also as to his power of reading all the different languages which he knows.

Another interesting fact is that two of these four cases of word-blindness were associated with right lateral homonymous hemianopsia. In the one case it was temporary but in the other it was permanent.[9] I had already met with a case in which right hemianopsia was present, and in my report of it,[10] I have quoted numerous cases where hemianopsia was associated with word-blindness. This frequent association, as I then pointed out, proves that the centres for the visual memory and for the right halves of both visual fields or the paths to them must lie close together, and pathological evidence confirms the inference thus drawn from clinical experience. The association of these two symptoms has a distinct localising significance. It points to a subcortical lesion in the white matter of the left occipital lobe so situated as to cut across the fibres passing from both occipital lobes to the left angular gyrus, and also the optic radiations passing to the left occipital cortex. The four cases are very instructive as bearing upon the prognosis and treatment of cases of word-blindness.

Cases of word-blindness may be divided into two great classes—first, those which recover more or less completely; and, secondly, those in which the loss remains permanent. Of these four cases, in three there was recovery and in one the word-blindness persisted. The course will depend upon whether the centres or the fibres leading to it have been destroyed, in which case the loss will be permanent, or whether its function has only been suspended by its blood-supply being interfered with, either by pressure of a growth or a hæmorrhage, or by occlusion of the cerebral vessel by a thrombus or embolism. In the latter case, where there is no actual destruction of cerebral tissue, a restoration of function is possible if the blood-supply is gradually restored to the centre either by a gradual diminution of pressure—e.g., by the absorption of a hæmorrhage—or by the re-establishment of the blood-supply temporarily checked by the blockage of a blood-vessel.

Cases 1, 2, and 3 afford excellent examples of recovery by gradual restoration of the blood-supply to the visual-memory centre, which had been cut off either by the pressure of a hæmorrhage or blockage of the branch of the middle cerebral which supplies the centre, either by embolism or thrombosis. Case 3 affords an example, also, of permanent loss of function from destruction of tissue. After recovering the power of reading temporarily lost after the first attack the patient had a second cerebral attack which left behind permanent word-blindness. Both attacks were probably cerebral hæmorrhages, the first attack only temporarily compressing the cortical centre, but the second destroying the cortical tissue, and hence the permanent word-blindness after the second attack. In Case 4, also, the permanence of the word-blindness and of the homonymous hemianopsia points to destruction of tissue, probably by a subcortical hæmorrhage in the region previously indicated.

At the outset of an attack, however, of word-blindness one cannot say with any degree of certainty whether a particular case will recover or whether the loss will be permanent, and hence our prognosis as to the patient recovering the power of reading must be very uncertain. Time alone will show whether there has been actual destruction of cerebral tissue or only temporary suppression of function. If the function is going to be restored, however, signs of improvement will speedily be manifested. The improvement is, as a rule, only very slow and gradual, and in the three cases reported it was three or four months before these patients were able to read with any degree of fluency. The signs of returning function, however, are usually seen within two or three weeks of the original loss. If the patient, as in Case 4, shows no improvement after a lapse of 14 months we may be quite certain that the cerebral tissue has been destroyed and that the loss is permanent. What course should be followed in dealing with these cases?

If you find that the function is gradually returning and the patient is gradually regaining the power of reading then do not try to force it or to accelerate it by asking the patient to practise for so long every day. On the contrary, I always give instructions that such patients are not to be allowed to try to read unless on the occasions that they are tested by the physician. Complete cerebral rest gives the best chance of recovery to the damaged brain tissue. Besides, the possibility of relapse is always to be borne in mind. One of my cases (Case 3) exemplifies this in a very marked degree. This patient had completely recovered the power of reading, which he again completely lost in about seven months after his first attack, no doubt due to a recurrence of cerebral hæmorrhage. Many of these cases which recover are due to cerebral hæmorrhage, and we must ever bear in mind the danger of recurrence. Hence the importance of urging complete cerebral rest in such cases and above all of preventing the patient from practising reading for at least a considerable time after the attack.

Of course, all medicinal measures will be employed with a view to helping the restoration of the cerebral function. If there has been any taint of syphilis, anti-syphilitic treatment must be energetically pushed. Syphilitic disease of the cerebral vessels is the primary cause of the lesion in a considerable number of these cases. In some cases you may get a distinct history of syphilis or manifest traces of past syphilitic lesion may still be present on the body and thus lead to the positive diagnosis of specific taint. But syphilis is such a protean disease that its primary and secondary manifestations are often so slight and insignificant as not to have been observed by the patient, so that even with perfect candour and good faith on the part of the patient no specific history can be obtained. Yet we know from clinical experience that in such cases, where the early symptoms have

[6] Neurologisches Centralblatt, Leipsic, 1888, Nos. 17 and 18.
[7] THE LANCET, Dec. 21st, 1895, p. 1564.
[8] THE LANCET, Dec. 21st, 1895, p. 1564.
[9] THE LANCET, Dec. 21st, 1895, p. 1564.
[10] THE LANCET, Dec. 21st, 1895, p. 1564.

been trifling, the tertiary symptoms may be peculiarly severe. Nor is this to be wondered at when we consider that these patients have received little or no treatment whatever until the serious later manifestations of the disease show themselves. Hence I think it is a pretty safe rule, even in the complete absence of positive evidence, to put the patient on specific treatment if there is the slightest possibility of the taint having been contracted. In Case 1 the age of the patient, still a young man, and the fact that he had had cerebral symptoms three years before, made it exceedingly probable that his symptoms were due to syphilitic disease of the blood-vessels. The very rapid improvement under specific treatment strongly confirmed this opinion. By specific treatment I mean that the remedies should be pushed boldly, and I hold that the patient should get the benefit of the mixed treatment both by mercury and iodide of potassium. I give the mercury either by the mouth or by inunction in sufficient doses to touch the gums gently and iodide of potassium in large doses, from 20 to 30 grains, thrice daily. I find that these large doses are better tolerated than the smaller ones and experience has convinced me of their superior efficacy. The treatment is to be stopped if there are no signs of improvement within a reasonable time.

Can anything be done in that other class of cases where the cerebral tissue has been destroyed and where, therefore, there is permanent loss of the visual memories of words and letters? The only course to be employed in such cases is re-education. This, however, should not be begun too early after the onset of the cerebral lesion or so long as there are any traces of active cerebral disease present. When we are persuaded that all active cerebral disease has disappeared then we may begin to attempt the re-education of the patient. The patient must be taught to read, first learning the letters of the alphabet and then learning to read by means of the graduated primers in the same way as children are taught. That a fresh area of the brain may be educated to perform the function previously discharged by another area is, I think, conclusively proved by Barlow's case,[11] which I quoted in the second chapter of my book. The patient, a boy, suffering from heart disease, had an attack of aphasia from which he gradually recovered. He had later a second attack of aphasia, which remained permanent. An opportunity occurred later of examining the patient's brain, when it was found that there had been embolism of the artery supplying the left third frontal convolution and later an embolism of the vessel supplying the right third frontal convolution. The recovery from the first attack of aphasia must have been due to re-education of the corresponding brain area on the right side, but when this centre had been destroyed the loss became permanent.

So with word-blindness, the visual memories of the signs of language, as has been stated in previous papers in THE LANCET, are deposited in the angular and supra-marginal gyri of the left hemisphere, but when this is destroyed there is a possibility of re-acquiring them and storing them in the corresponding area on the right side of the brain. The chances of success will be greater with young patients, as the younger the individual the greater are the capacities of development of nerve-cells and nerve-fibres.

In the first case, which I reported seven years ago,[12] and in which the patient was a man, 58 years of age, completely word- and letter-blind, re-education met with partial success. After six months' daily practice he learned again to recognise the letters of the alphabet, but he never learned to read by sight. He was never able to re-acquire the visual memories of words, or at the most only of a very few of the short familiar ones. He could only read by spelling out each word letter by letter and thus appealing to his auditory memory. He thus made little progress beyond acquiring the visual memory of letters. After labouring at this for a year he came to me one day and said that he had given the task up. It took so much out of him, as he expressed it, and required such intense mental effort and he was making so little progress that he felt constrained to abandon any further efforts towards learning to read. I had recently an opportunity of examining him and found that he had again lost the visual memory of letters which he had acquired with so much effort. He was now completely letter-blind as well as word-blind. The visual memory of letters which he had acquired with so much difficulty had been lost completely in a few years from want of practice. This was in striking contrast to the visual memory of figures, which had never been affected, and which remained quite intact, although never exercised during the last seven years. He read figures up to millions with correctness and fluency. This shows that the visual memory is less receptive late in life and that the impressions made are not so permanent. Five years' interval had completely effaced the visual memory of letters which had been re-acquired with great labour, but after seven years' interval the visual memory of numbers remained intact, because the latter was acquired at an early period of life when the cerebral cells have great powers of receptivity. His case, however, was so far encouraging, as it showed the possibility of re-acquiring by practice the visual memory of symbols which had been obliterated by disease. In the case of a younger patient the prognosis is decidedly more hopeful. An opportunity of putting this to the test was recently afforded me by Case 4 which I saw in consultation with Dr. Semple on Sept. 11th, 1901. This woman, aged 34 years, had been completely word- and letter-blind for a period of 14 months. So complete was the letter-blindness that she could not recognise a single letter of the alphabet. I recommended that she should attempt to read again, practising regularly every day. This has been done and, as I have just heard from her medical attendant, with the most promising results. She has not been able to practise long at a time because it seems to exhaust her mentally—just the same complaint as in my other patient. She has, however, in two months made considerable progress, being now able to read all the letters of the alphabet and to recognise by sight also small words of two and three letters. She is able to read the simple sentences in a child's primer. This result is most encouraging and there is every reason to hope that she will yet regain the power of reading which had been lost by the destruction of the visual memory centre on the left side of her brain.

In another class of cases to which I have recently directed attention[13] under the term "congenital word-blindness," where children born with a defective visual-memory centre experience the greatest difficulty in learning to read, I have shown what can be done by determined and persevering effort steadily directed to their education, and Mr. E. Nettleship[14] in a recent paper has confirmed my views on this subject. These patients have, no doubt, the great advantage of youthful brains, when the power of receptivity is greatest. Still, the success achieved in these cases should further encourage us, even in the case of adults, to persevering effort in the attempt to re-educate the patient and to re-imprint in the brain the visual memories of words and letters which have been blotted out by disease.

Glasgow.

[11] Brit. Med. Jour., 1877, vol. i.
[12] THE LANCET, Dec. 21st, 1895, p. 1564.
[13] THE LANCET, May 26th, 1900, p. 1506.
[14] Ophthalmic Review, March, 1901.

A CASE OF TUMOUR OF THE LEFT PRE-FRONTAL LOBE REMOVED BY OPERATION.[1]

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THE following case presents features which appear to us worthy of being recorded. In spite of the advances made in cerebral surgery in recent years a very small number of the successful operations have been performed for tumours. This is due chiefly to the fact that very few cerebral tumours, even if they can be accurately diagnosed and located, are removeable. Starr has published a table of 1100 cases of cerebral tumours reported by several well-known observers which shows that only 7 per cent. were "probably removeable." The difficulty in localising cerebral tumours is still very great in spite of recent advances in our knowledge of cerebral anatomy and physiology. If situated in the Rolandic areas, in any of the speech centres, or in the occipital lobes, symptoms are produced which afford great

[1] A paper read before the Edinburgh Medico-Chirurgical Society on Jan. 15th, 1902.

help in locating the tumour, but there are still many "latent" or "silent" regions of the brain, lesions in which give rise to no symptoms or to symptoms which are as yet not understood.

Our patient suffered from a tumour of one of those so-called "silent" regions—viz., the left prefrontal lobe—and his case illustrates the fact, which has been pointed out by *several* observers, that a tumour or other lesion in this region gives rise to a fairly definite group of symptoms. The prefrontal lobe was looked upon as a silent region from the fact that experiments—such as those of Ferrier, Horsley, and others—failed to elicit any definite motor reaction when this part of the brain was electrically stimulated. Extirpation of the prefrontal lobes in monkeys, however, gave rise to a train of symptoms which, as far as they can be compared, closely resemble those exhibited by our patient as well as by the patients in other reported cases. As these symptoms are produced by an interference with inhibition, with attention, and with judgment, which are probably the highest functions of the brain, rendering man pre-eminent amongst living creatures, it is very difficult to compare such symptoms with those exhibited by the lower animals.

Our patient, a man, aged 47 years, was admitted into Leith Hospital on Oct. 12th, 1901. The history we obtained was that he had enjoyed good health till the May before his admission when he began to suffer from pain in the back of his head and in the small of the back and shooting pains in the legs. Soon afterwards the pain was referred to the left frontal region and it subsequently remained localised to that part of the head. Early in his illness the left side of his forehead and face became swollen to such an extent that his left eye was closed, and while this swelling lasted the pain in the head was relieved. After about four weeks the swelling began to disappear gradually. During this time the patient was taking some medicine—probably potassium iodide—which had been prescribed for him previously at the Royal Infirmary, Edinburgh. He had occasional attacks of vomiting of the cerebral type, without relation to food or other apparent cause. He continued at his work till Sept. 12th, on which date the term of his employment expired. For about a fortnight he was no worse, but then he became depressed, refused to leave his bed, and would not speak to his wife. He sometimes refused to take his food, although his appetite appeared to be normal. His memory became affected also, so that he would forget in a few minutes what he had been saying. He became very emotional and would begin to weep at the sight of his friends—as his wife expressed it, "he became kind o' soft." It was also a source of annoyance to his friends that he seemed to lose all sense of decency and shame and exposed his person unduly and needlessly. He suffered from incontinence of urine but had full control over his rectum. At times he appeared not to be aware where he was, and when in his own house he would say to his wife, "Let us get away from here." During the night especially he seemed to lose his bearings and did not know where he was. At this time he complained greatly of the pain in the left frontal region and a swelling appeared over the frontal eminence. All these symptoms gradually got worse and he was sent to Leith Hospital on Oct. 12th, 1901.

On admission the patient lay on his back in apparent comfort. He was sleepy, dull, and apathetic, and could only be roused with difficulty by pinching or shaking him or by a sharp question. When awakened he yawned frequently. His hearing seemed to be normal. His responses to questions were correctly expressed, but were made more slowly than was normal. He could not sustain his attention for any length of time; any subject which was brought before him, although it might attract his attention for a moment, seemed to pass from his mind very soon. As regards the affection of his memory, it appeared to be not so much a blotting-out of his past impressions as a want of power of associating memories, of comparing and contrasting them. Lack of judgment, therefore, was a marked feature of his mental condition. There was no aphasia, but there was some degree of dysarthria which was well marked on his attempting to pronounce test words and sentences, such as "British Constitution," "truly rural," and "artillery." His reading and writing could not be tested as he had never learned to read and to write. There was paresis, especially in the lower part of the right side of his face, and the power in the right arm, as evidenced by the grasp of the hand, was not as great as in the left side. He complained of occasional pains, which were not very severe, shooting down the front of both legs. The plantar and patellar reflexes were present but not exaggerated. There was ankle clonus. He seemed to walk easily and, as far as could be tested, his coördination was not impaired. His wife stated that he had staggered on suddenly getting up out of bed, but he did not complain of giddiness. There was no pain in the left frontal region unless when the skull was percussed. An examination of the blood showed hæmoglobin 90 per cent., red blood corpuscles 4,800,000, and white corpuscles 8000. On microscopic examination of films nothing abnormal was detected. The sight of the left eye was completely lost, the eye having been disorganised by small-pox 25 years ago. The sight of the right eye was still good. The right pupil was slightly contracted but responded to light. Although the patient saw quite well he was not accurate in counting the number of fingers held up before him. He could name objects at sight quite well. He could not tell the time on a watch correctly, although he recognised that it was a watch and said so when asked to name it. He had no difficulty in recalling words or names. He answered questions slowly and apathetically and in such a way as to indicate that he took no interest in what he was saying. His gestures also suggested this. For example, if he was shown a watch and asked what it was he looked at it and said "A watch." Then he half closed his eyes, assumed a disinterested expression, and turned his head away as if he had completed some piece of work and was now done with it. When asked his name he gave it all right, but when asked his age he said, "Sixteen." On being asked the same question repeatedly he always answered, "Sixteen." He was then asked if he was a hundred and he answered, "Yes, more than a hundred." When asked where he lived he gave the name of a street he lived in a few years previously. On being asked if he lived in S—— street (where he really did live) he said, "Yes." When asked, "Where are you living now?" he said, "Here." Over the left frontal eminence was a small round swelling, evidently arising from the bone, in the centre of which was a soft area. It was tender on pressure. Over the right frontal region was a small depressed cicatrix the result of an abscess which had been opened three years previously in the Royal Infirmary. The tongue was slightly tremulous and flabby, moist, and very slightly coated posteriorly. It was protruded in a straight line. The teeth were bad, the breath was foul, and the bowels were regular. The abdomen was slightly tympanitic. There was no splenic or hepatic enlargement. He passed his urine and fæces in bed, but this apparently was not from want of control of his sphincters but from want of appreciation of the impropriety of doing so.

As regards the history of the patient previously to the onset of his present illness it was stated that he had always enjoyed good health. Syphilis was denied. He had been married 17 years and his wife had had three miscarriages—at six, seven, and eight months respectively—and four living children. Three years before he had had "an abscess" opened over the right frontal region. Four years before this abscess formed he had received a blow on that region. There was no history of injury to the left side of the head. He had never been a heavy drinker or smoker.

With regard to the treatment and progress, on admission on Oct. 12th the patient was put on light diet and given iodide of potassium and mercury. On the 14th he was very drowsy and was much more stupid. He would not speak and there was great difficulty in making him take food. He evidently did not realise where he was. He vomited once after dinner. There were aimless movements of his hands. At 7.30 P.M. the patient exhibited a constant up-and-down movement of the left arm which was not purposive. There was no twitching of the muscles. He could move his legs freely and equally well, but kept his right arm still unless a stimulus sufficiently strong to be painful was applied. On the morning of the 15th he was much more stupid—could hardly be roused and could not be made to answer except by a grunt or monosyllabic sound. His breathing was sometimes almost stertorous and had a tendency towards the Cheyne-Stokes type. There was slight rigidity of the right arm. On pinching his face he carried both hands up to the painful part. He was in much the same condition up to 8.30 P.M., when it was noticed that he had slight difficulty in swallowing and that his breathing had become more Cheyne-Stokes-like. His pulse since admission had been slow, ranging between 60 and 68. The temperature was normal but had shown a tendency to rise to about 99 during the

previous 24 hours. The blood examined showed about 8000 leucocytes—about the same number as two days before. There was no anæsthesia anywhere. The projection over the left frontal eminence was still present and was distinctly painful and pitted on pressure. Percussing over the region with the finger caused wincing, but there was no other painful part of the skull. Ophthalmoscopic examination showed no neuritis, the right disc showed some blurring of the edges, and there was some dilatation of the veins in the fundus.

Operation was performed on Oct. 15th at 10 P.M.: chloroform was administered and Mr. Miles operated. A horse-shoe shaped incision was made with its base over the left eyebrow. On reflecting the scalp—which was slightly œdematous—a small area of caries was exposed on the surface of the frontal eminence. It was not larger than a threepenny-piece and only affected the most superficial layer of the outer table. A small quantity of cheesy débris lay between the carious bone and the scalp. A circle of bone which included the carious area was removed with a one-inch trephine. The inner aspect of the bone was normal. The dura mater was not adherent, but was slightly thickened. It bulged into the trephine opening and gave evidence of considerable intracranial tension. On incising the dura mater the brain substance appeared to be normal, but it did not pulsate. On introducing the finger a firm nodular mass could be detected occupying the tip of the frontal lobe. The trephine opening was enlarged by rongeur forceps. The tumour was then recognised to be definitely circumscribed and to have a thin covering of cortex over it. To the finger it had the consistence of a normal prostate as felt per rectum. It was easily shelled out without causing any hæmorrhage. The brain pulsated freely as soon as the tumour was removed, and the cavity in the frontal lobe was immediately filled by the brain matter bulging into it. The wound was closed, a small strand of iodoform gauze being left in as a drain at one corner. After removal the tumour was found to be evenly lobulated, having a shape which suggested a comparison to a tomato. It was uniformly firm, of a dull grey colour, and apparently not very vascular. It measured two inches long, by one and a half inches broad and one and a quarter inches in thickness. The microscopic examination, made by Dr. T. Shennan, showed it to be composed externally of young connective tissue, which towards the centre gradually passed into caseous material like that found in syphilitic conditions. It was therefore a syphiloma. Next day (the 16th), although somewhat dull, he was able to answer questions. He knew that he was in hospital and he recognised his wife. The following day on the house surgeon going into the ward the patient said, "Good morning, doctor," before the house surgeon reached his bedside. He spoke voluntarily and answered questions in a bright and lively manner—in fact, it was thought that he did so a little too promptly. His condition suggested that of a man who had had a little too much alcohol. He did not wait to be spoken to or asked a question, he started the conversation on his own account. The slight paresis of his face was gradually passing off. On the second day he voluntarily controlled his bladder and bowels and asked for the bed-pan when he required it. He had no discomfort in the head. On the 18th he resembled still more a man slightly intoxicated, began to use bad language, and became emotional. On the 21st the patient was still emotional. He remembered events that happened some time before his admission to hospital, but not those immediately preceding. He did not remember coming to hospital. He asked about the yacht-race—an event in which he had been pecuniarily interested and which had been attracting much attention for a few weeks previously. On the 28th and 29th he complained of pain in his head. The pain was over the seat of the wound, but there was nothing made out to cause it. Iodide of potassium was prescribed. He was able to be up on Nov. 12th and has continued well ever since; he was shown at the meeting of the Edinburgh Medico-Chirurgical Society on Dec. 4th, 1901.

The chief points that enabled us to arrive at a diagnosis as to the localisation of the lesion that produced the symptoms in the patient may be summarised as follows. The symptoms undoubtedly pointed to the cerebrum rather than to any other part of the nervous system. The only symptom which might have caused confusion was the apparent want of control over his bladder and rectum. Careful inquiry, however, showed that the loss of control had a higher origin than the spinal cord—that, in fact, we had to do with a case in which as far as these functions were concerned the man had been reduced to the animal condition as in advanced dementia. Associated with this symptom was that of loss of modesty and shame, just as one finds in cases of dementia, where there is a gradual involution of the nervous system beginning in the higher levels. The general condition of the patient and the short duration of the illness enabled us, however, to exclude dementia. It was not quite so easy to exclude cerebral softening due to embolism or thrombosis, but the history of the case—viz., the gradual onset of the symptoms (there being no history of a sudden attack and especially no history of distinct paralysis of motion or sensation either general or of the special senses)—pointed to the softening, if present, being in the frontal region and not in any area further back. Cerebral thrombosis or embolism, however, is very rarely limited to the frontal region and is very much more common in the central regions of the brain—i.e., in the areas supplied by the middle cerebral and its terminal branches in the Sylvian fissure. Hæmorrhage was excluded for almost the same reasons as were embolism and thrombosis, but especially from the history of the gradual onset, although it was necessary to bear in mind that the rapid increase in the severity of the symptoms the day before the operation might have been due to hæmorrhage from a previously existing tumour. This rapid progress, however, was thought to be more probably due to congestion and œdema—a condition which frequently comes on where there is a tumour and often leads to a suddenly fatal issue. Abscess was excluded from the history and from the absence of fever and of leucocytosis.

The symptoms which pointed to tumour were—the gradual onset and the apparent steady increase and progress of the symptoms from the time that the patient gave up work about a month before admission. These symptoms indicated a gradual increase of intracranial tension. The slow and dull cerebration with depression of spirits, together with the slowness of the pulse and the attacks of vomiting without apparent cause, were very suggestive of increased intracranial tension. The usual eye symptoms were absent, but unfortunately only one eye could be examined, and that the one on the opposite side from the lesion. His good eye, although it had no optic neuritis, showed blurring of the edges of the disc with some dilatation of the veins. A tumour being indicated, was there anything pointing to its seat? In the first place, we had a symptom which pointed to a lesion of the left side of the brain—viz., the very slight paresis of the right arm, the more distinct paresis of the right side of the lower part of the face, with dysarthria in speaking, but no aphasia. The symptom pointed to an implication of the fibres passing from the lower part of the Rolandic areas to the internal capsule. The fact that there was no aphasia showed that Broca's convolution was not affected, and as there was much less affection of the arm than of the face the lesion producing this symptom was almost certainly in the centrum ovale subcortical to the lower part of the Rolandic areas. One other symptom pointed to the left side of the cerebrum. There was a slight but distinct swelling over the left frontal eminence which was painful to pressure and was slightly soft in the centre. This was felt to be distinctly external to the bone, but as he had a cicatrix over the other side of his forehead where he had had a previous swelling three years before which had been incised, the present one was looked on as specific in character and therefore might be associated with a gumma on the internal surface of the skull. These two symptoms, therefore—viz., the presence of the paresis of the right side of the face and the presence of a swelling over the left frontal region—apart altogether from his mental symptoms, pointed to the tumour being on the left side. His mental or psychical symptoms were, however, not only confirmatory, but if they had been taken alone would have been sufficient to have justified an operation over the left frontal region. These symptoms may all be considered as a loss or depression of the inhibitory power of the individual. Such symptoms are exceedingly difficult to analyse and are even more difficult to describe. The absence of such symptoms renders a man what he is, gives a man his distinctive character in relation both to the lower creation and to his fellow-men—the presence of such symptoms alters the *ego* of a man, takes away his special mental characteristics, and reduces him to a lower level. The loss of inhibition of his organic centres, such as those of the bladder and rectum, we

have already referred to. His emotional condition was a prominent symptom in his case. The loss of his sense of modesty and shame we have also alluded to. These quite evidently point to loss of inhibition and are important symptoms in pre-frontal lesions. But to many the loss or diminution of the faculty of attention—the most prominent symptom in his case—will not so evidently appear as a loss of inhibition. Yet so it is; there can be little doubt that attention is largely an inhibitory process—in fact, some psychologists consider it entirely so. Be that as it may, a want of the power of attention was a marked feature in this case. His attention could be directed for a second to any object or statement, but only for a second. The next second he was apathetic and listless and required to be again roused. Closely allied to this loss of attention was his loss of power of forming a judgment about anything. He could not compare or contrast two things or ideas. This again may have been due to his want of power of sustained attention, his not being able to have two ideas in his mind at one time. His individual memories seemed all right. He saw objects, knew what they were for, and could name them all right. Whilst his memory for objects and things that he had seen before his illness was unimpaired, his memory for things that were shown him and events that happened since the onset of his most marked symptoms was very imperfect. He forgot what happened almost immediately. This probably in part resulted from the diminution in his power of sustained attention and in part from the general depression of the cerebrum due to the intracranial pressure, so that recent memories did not become fixed, because fixation in memory requires health and nutrition. This is proved by the fact that even now when he has recovered he has not regained the memory of events that happened for some time before his admission to hospital. It is questionable whether the prefrontal lobe has anything specially to do with the fixation in the memory apart from the faculty of attention—although the process of voluntary recollection is probably initiated in the prefrontal lobe. The symptoms exhibited by this patient have been pointed out as occurring in prefrontal lesions and there are now a good many such cases in medical literature. The time has come when we should discard the idea that the prefrontal lobes are "silent regions." Far from being silent regions, the left prefrontal at least speaks in decided if little understood language as being the seat of faculties the loss or deterioration of which completely changes the character of a man. There is much evidence to show that the left prefrontal, just as the left Broca's convolution, takes a more prominent part in higher cerebration than the right prefrontal, but into this question we have no intention of entering at present. The best summary of the symptoms of pre-frontal tumours which we can find in medical literature is that of Allen Starr of New York who along with McBurney[2] in 1893 described a case very similar to ours in which a sarcoma was removed from the frontal lobe. The position of the tumour was, however, somewhat further back than in our case, and therefore produced more symptoms pointing to the motor areas. Starr[3] had in 1884 made an inquiry into the symptoms of 23 cases of disease of the frontal lobes and found that decided mental disturbances occurred in half of them. The following were his conclusions: "The form of mental disturbance in lesions of the frontal region does not conform to any type of insanity. It is rather to be described as a loss of self-control and a subsequent change of character. The mind exercises a constant inhibitory influence upon all action, physical and mental, from the simple restraint on the lower reflexes, such as the action of the sphincters, to the higher control over the complex reflexes such as emotional impulses and their manifestation in speech and expression. This action of control implies a recognition of the import of an act in connexion with other acts—in a word, it involves judgment and reason, the highest mental qualities. By inhibiting all but one set of impulses it enables one to fix the attention upon a subject and to hold it there. It seems probable that the processes involved in judgment and reason have for their physical basis the frontal lobes, if so, the total destruction of these lobes would reduce man to the state of an idiot, while their partial destruction would be manifested by errors of judgment and reason of a striking character. One of the first manifestations would be a lack of that self-control which is the constant accompaniment of mental action and which would be shown by an inability to fix the attention, to follow a continuous train of thought, or to conduct intellectual processes. It is this very symptom that was present in one half of the cases collected. It occurred in all forms of lesions—from injury by foreign bodies, from destruction by abscess, from compression and softening due to the pressure of tumours—and therefore cannot be ascribed to any one form of disease. It did not occur in lesions of other parts of the brain here cited. But its presence in such a large number of these cases warrants the suggestion that in cases of suspected lesion of the frontal lobe the mental condition of the patient as shown by his acts of judgment and reason should be carefully examined and a change of character or behaviour carefully noted." It would be impossible for us to wish to have a better description of the symptoms of our case than this of Starr, the result of an investigation into the symptoms of frontal lesions. Ferrier,[4] Welt,[5] Gilman Thompson,[6] Griffith and Sheldon[7] as well as other neurologists and psychologists have produced evidence more or less in favour of these conclusions. We would point out one other symptom in this case which has also been pointed out by Bruns[8] as occurring in cases of frontal tumour—viz., staggering on walking or attempting to walk. Our patient had this symptom and Bruns points out that it may suggest cerebellar disease. He says that the symptom is usually absent in tumours of the Rolandic areas. It has been suggested that the symptom may arise from involvement of the bundle of fibres which are known to pass from the frontal lobe to the cerebellum. The same bundle may explain the fact that our patient at the beginning of his illness had an intense pain in the back of the head which, however, gradually passed round to the frontal region. It is interesting to note the symptom in connexion with the opposite condition which has been pointed out by Dr. Purves Stewart, that cerebellar lesions may be accompanied by frontal pain.

The removal of the tumour was followed by a rapid disappearance of the dull and depressed symptoms in this case, and the only mental symptom that has been noticed since is what one would describe as good cerebration evidenced by slight "forwardness" and sometimes "witticism." Oppenheim and Jastrowitz have pointed out that "hilarity" and "witticism" are accompaniments of frontal tumour, but we would suggest probably only before intracranial pressure gets too great. These symptoms are probably explained by slight injury to some of the structures concerned in voluntary inhibition. The condition is allied to that seen after administration of a moderate amount of alcohol, the result of the alcohol being, according to some authorities, the reduction of inhibitory control. It is a curious fact that the affection which produced the swelling over the frontal bone was not structurally connected with the tumour in the frontal lobe. That tumour had begun at the anterior part of the lobe and had extended backwards and downwards, pushing the structures before it, until latterly it had implicated the fibres passing from the lower Rolandic areas to the internal capsule, so producing the paresis of the right side of the face and of the arm.

[2] A Contribution to Cerebral Surgery, the American Journal of the Medical Sciences, April, 1893.
[3] Cortical Lesions of the Brain, ibid., April, 1894.

ACUTE SUFFOCATIVE PULMONARY ŒDEMA.

BY THOMAS LISSAMAN, M.R.C.S. ENG., L.R.C.P. LOND.

I HAVE read with the greatest possible interest the very full and graphic description of this condition by Dr. J. L. Steven in THE LANCET of Jan. 11th, p. 73.

I am fortunate, or unfortunate, as the case may be, to have under my care a patient who has suffered from this affection for two and a half years. She is a married woman, aged 45 years, with five children. She is stout and well nourished, with no traces, as far as I have observed, of any organic lesion of the heart, kidneys, or lungs, or, indeed, of any organ. She first came under my notice in June, 1899.

[4] Functions of the Brain, and Croonian Lectures, 1890.
[5] Allenist and Neurologist, April, 1890.
[6] Medical News, 1891.
[7] Journal of the Medical Sciences, 1890, p. 223.
[8] Deutsche Medicinische Wochenschrift, February, 1892.

I found the patient sitting up in bed, leaning forward with her head almost touching her knees, which were raised up, suffering from most terrible dyspnœa. Her face was livid; she was bathed in cold sweat; her breathing came in short, sharp gasps; and with each expiration she ejected, without any apparent effort, a thin pinkish fluid. She was apparently dying. The remedies which I then applied were an injection of one ounce of brandy with gruel into the rectum—she was far too distressed to swallow anything—the application of hot-water bottles to her feet, and the free application of very hot fomentations to the præcordium. The pulse was small and very rapid, the respirations were from 30 to 40 per minute, and the temperature was normal. Loud moist sounds were heard all over the chest. The amount of expectoration was very great. After four or five hours there was some improvement in her condition and she was able to swallow. I administered at intervals of 15 minutes two drachms of sweet nitre diluted with water. She was apparently very much relieved after three doses of this remedy. On the following day she seemed to be little the worse for the attack with the exception of being languid and tired and disinclined for exertion. I prescribed rest in bed for a day or two and gave her a mixture containing bromide of potassium and camphor. I ceased attendance on the third day as she seemed to be all right. The urine was not examined. Four days afterwards, on July 3rd, I was hurriedly sent for about the same time in the evening, and there was a repetition of the above-described condition, with the same result. After this second attack I made a very thorough examination of the patient, but could find no organic trouble of any kind. The urine on this occasion was not examined, but I gave directions that a sample should be retained every day, and that if the attack recurred the sample of urine passed immediately before the attack should be sent to me. On July 30th the patient had a third attack, and the urine was examined, but nothing abnormal was detected in it. She had 20 attacks in the next 12 months. In the meantime I looked up the subject in the literature at my disposal, but could find no description of any case exactly like that of my patient. I discussed it with various medical friends who could throw no light on the subject. I looked upon the case as one of asthma in a wide sense of the term, but such remedies as stramonium in its various forms, arsenic, belladonna, digitalis, and stimulants appeared to me to do harm rather than good. The attacks became so frequent—they seemed to have become a habit—and they were so terrible to witness that I was in despair over the case, for by now my patient was a confirmed invalid, unable to do any household work, and was completely broken down by the frequent attacks, and possibly in some degree by the drugging which I had subjected her to, in the vain hope of finding a remedy.

In March last I made up my mind that I would treat the next attack with chloroform, having already tried nitrite of amyl with unsatisfactory results.

I commenced the administration of chloroform in fear and trembling as to the result. I administered it in the ordinary way on a handkerchief, giving the patient a whiff of chloroform and a breath of air in alternate inspirations. The gasping, short nature of the breathing, and the obvious obstruction due to the frothy material in the air-passages prevented any great amount of chloroform vapour being introduced into the lungs. However, after from 10 to 30 minutes of administration in this way a marvellous change came over the patient. The lividity disappeared, the breathing became easier, the action of the heart became far less laboured, and the respirations slowed down, the patient lying back on the pillows apparently asleep. This condition lasted perhaps for an hour, when I roused her, and she expressed herself as feeling all right. So striking was the relief afforded that my patient begged me to leave the remedy with her in future, so that she could administer it to herself in case of need. I would not consent to this at that time, as I feared that carelessness in giving the vapour in too concentrated a form might end in disaster. During the next three months she had 23 attacks, at each of which I administered chloroform, with the invariable result that the attack was stopped in from 20 to 30 minutes. I was away from home last June for three weeks. My locum-tenent was called to the case, but he declined to take the responsibility of giving chloroform without a consultation. A consultation was held and the husband was informed that his wife was dying and that the administration of chloroform was out of the question, so my patient endured six or eight hours of her previous agony. Fortunately I was at home when the next attack occurred, and I was able to convince my colleagues of the value of the remedy. So terrified was my patient at the idea that I might not be available at any future attack that she begged me to teach her husband how to administer the remedy, and I, having lost all fear of any ill-effect from the judicious administration of chloroform in her case, devised the following method for her husband to carry out. I gave him two drachms of chloroform with instructions to put in an ordinary tumbler a few square inches of clean blotting-paper, to pour the chloroform on the blotting-paper, and to hold the tumbler upright under the patient's mouth and nose, but to be very careful that she did not take more than three inspirations from the tumbler without one intervening inspiration with it away. I witnessed the management of the chloroform on several occasions, and now he habitually gives the remedy, but I never allow him to have more than two drachms of chloroform in his possession at any one time. The attacks now, from beginning to end, with the administration of chloroform at the earliest possible moment, rarely last half an hour, and my patient appears none the worse the day following them. She has had no medicine for many months. I have notes of 72 attacks in the two and a half years during which she has been under my care and they were all as instantaneous in their onset as an epileptic fit. They varied somewhat in intensity and duration from time to time, but they were all characterised by these constant phenomena: suddenness of onset, intense agonising pain in the chest, frightful dyspnœa, lividity of the face, profuse cold sweat all over the body, laboured action of the heart, with a small rapid pulse, and, lastly, but most important, the ejection (one can hardly call it expectoration, for that implies coughing, which is almost absent) of enormous quantities of thin pink, sero-mucous fluid. I have measured as much as 42 ounces of this fluid in an attack lasting eight hours. I have never detected rise of temperature in the rectum or vagina during an attack. The attacks always occur at night. They are almost invariably preceded by a desire to go to stool and the dyspnœa always comes on then during the act of defecation. They very often occur about the period of menstruation, especially if that is delayed a few days, as it often is, though it is normal in other respects. I saw my patient to-day (Jan. 12th, 1902). She says she is better in every way than she has been for years. She is no longer an invalid, she is cheerful and confident, and can do her work as well as ever she did. I could find no organic disease of any kind. The urine is not albuminous. She has lost all fear of the attacks provided she has the chloroform at hand and she tells me that five minutes is now about the time the distress lasts, and then "everything eases off." She often does not go to sleep from the effects of the chloroform, but the attack never returns that night. There has been no pinkish sputum for some months. She is getting rid of the habit. I can add nothing further to the admirable description of these attacks given by Dr. Steven, but I have a word to say in regard to the pathology. The symptoms appear to me to indicate clearly obstruction in some part of the pulmonary circulation. The hypothesis which I have formed is this. Owing to some cause—at the nature of which I do not even guess—it seems to me that there is a spasm of the pulmonary venous (or efferent) system. This will account for the rapid engorgement of the lung and the consequent extravasation of serous exudation in the alveoli, just as engorgement occurs in a limb in venous obstruction. Spasm of the efferent vessels *alone* would allow rapid accumulation of blood in the (afferent) pulmonary artery and its branches, and the terrific labour of the heart which is present appears to be an effort to overcome this obstruction. The continued obstruction would eventually lead to general systemic venous engorgement, hence the lividity of the face, &c. The action of chloroform in my case seems to bear out my hypothesis, for as soon as the centres which preside over this spasm are affected by the chloroform the whole train of phenomena subsides. On the contrary, if the attack is allowed to run its course, it seems to me that the centres eventually become so paralysed by the effect of the carbonised blood that the same result happens. The spasm is relaxed eventually and the symptoms disappear but in hours instead of minutes, as they do under the action of chloroform.

Acute spasmodic asthma, which resembles this condition in many respects, differs, as Dr. Steven points

out, in the absence of the peculiar whitish-pink, abundant expectoration. It seems to me that the difference in the two conditions may lie in this—that in acute spasmodic asthma it is the pulmonary artery, or afferent system, that suffers from spasm, and in acute suffocative pulmonary œdema, it is the pulmonary vein, or efferent system, which is affected; for in the former case there is anæmia of the lungs with no expectoration during the attack, and in the latter there is engorgement, with pints of it. In other words, in acute spasmodic asthma ("dry asthma") the lungs are in much the same condition as the fingers are when they are cold, white, and "asleep," or as in Raynaud's disease. In acute suffocative pulmonary œdema ("wet asthma") they are, perhaps, in a similar condition to the extremities in certain forms of erythromelalgia. I think, therefore, one may reasonably argue that the two diseases are similar, but that they differ in the site affected by the provocative agent, whatever it may be. Both clinical pictures may be ascribed respectively to vaso-motor spasm of the different pulmonary vascular systems.

I shall certainly rely with confidence upon chloroform as a remedy for both conditions in future, for it seems to me from the observation of my case that great damage was done by sedative drugs and also by stimulation by alcohol, and none of the vaunted remedies for asthma did my patient any good. She seemed to be drifting into a condition of imbecility, like an epileptic does, until the systematic administration of chloroform stopped the violence of the attacks. She still has attacks—about two a month (instead of three or four a week as in March last)—it is true, but as the duration of them is so short and the remedy inspires such confidence she feels sure eventually she will completely recover.

Bolton-le-Moors.

TWO CASES OF ACUTE DELIRIUM.[1]

BY R. H. COLE, M.D., M.R.C.P. LOND.

CASE 1.—The patient was a single woman, aged 40 years, living with her widowed mother. For the sake of employment and to supplement her income she had lately taken some work. There was no family history of insanity, but both the patient and her mother were decidedly nervous, and a brother had died from hip disease. Until nine months before she came under my observation she had enjoyed fairly good health. She then developed a bad attack of pernicious anæmia, from which, however, she recovered at the end of three months and returned to her work. On Feb. 21st, 1900, she again began to feel ill and prostrate, and she feared a relapse of her former illness. This time, however, she was more nervous and apprehensive, complaining of vague cranial uneasiness, and she said that she felt that she was "going off her head." The blood was examined again; it was found to present signs of pernicious anæmia and she was admitted for treatment into a nursing home. The nervousness and restlessness increased and in a week's time, after a few hours' warning, she became completely delirious which, on March 4th, necessitated her removal to an asylum where she was under the care of Mr. G. E. Mould. Before the delirium developed she had three sleepless nights. The patient now presented a wild appearance; she had no powers of recognition whatever and chattered incessantly, her speech being incoherent and the same phrases being repeated over and over again and she asked questions which she proceeded to answer herself. She gesticulated and was under the influence of visual and aural hallucinations. At times she had an ecstatic expression, apparently believing herself in heaven with angels flitting about. She had to be fed artificially and her bladder and rectum required constant attention. In spite of sedatives it was difficult to procure any sleep. The pulse was weak, varying between 120 and 140, the temperature being 99° F. There were a dry cracked tongue and sordes on the lips. The patient was given abundant nutriment and stimulants but she was evidently becoming exhausted. On the 9th her temperature rose to 105° and she seemed to be in a moribund condition. She was ice-packed, a hypodermic injection of strychnine was administered, and the stimulant (brandy) was increased. She rallied somewhat and the temperature was reduced, only to rise again on the following day to 107°. The patient was then placed in an ice-cold bath for half an hour which reduced the temperature to normal for a few hours. On the temperature rising once more she was placed on an iced water-bed and was given quinine and strychnine by the mouth and meat extracts and stimulants. She responded but feebly to these agents; the delirium had now become of a low muttering form and she picked at the bed-clothes. She died on the 11th in a state of collapse. Unfortunately no post-mortem examination was obtained.

CASE 2.—The patient was a young professional man, aged 27 years and single. An aunt had suffered from chronic insanity. With the exception of an attack of influenza a few years previously the patient had always enjoyed excellent health. He was by nature sociable, athletic, and clever, and had led a regular and temperate life. He was about to begin his life's work, having just finished his final examinations. He seemed unduly to feel the responsibility of his office, and some irritability and change of disposition were observed by his friends for a fortnight or more. On April 3rd, 1901, he first complained of not feeling well, being depressed and unable to collect his thoughts; however, he continued at his work until the 6th, with sleepless nights, when one of his friends gave him a Dover's powder and sent him to bed. On the 7th his manner was so strange that an attendant was engaged. He looked very dejected and would hardly speak; he gave expression, however, to delusions that he had neglected his work and ruined his family and he was somewhat suspicious about his diet. He could obtain no sleep without hypnotics and five days later (on the 12th) he was transferred to an asylum for special treatment. He would not eat an ordinary meal, but after persuasion drank milk on the first two days after his admission. From the 14th to the 21st he had to be fed with a tube (nasal). He was now in an exceedingly resistive mood, champing his teeth, refusing all food, and struggling during the dressing and when undressing or when going out for exercise and returning to his room; he now, however, slept well and without any hypnotics. On the 22nd he took his meals voluntarily, and on the next day he had a lucid interval which commenced suddenly and lasted three hours; during this interval he stated that he had a vague recollection of being moved to the asylum, but could scarcely remember anything more. He gradually became more restless and inattentive, and in the course of an hour he had drifted into a semi-stuporous condition, but he was quite tractable and took his food well. He would not speak except to utter emotional phrases, and any reference to his friends or relatives increased his agitation. In this state he remained for five weeks. On the night of May 28th he was sleepless and he looked ill on the next morning, his temperature being 100° F. and his pulse 120. He became very excited, struggled with his attendants, and took his food only by compulsion. During the next three days the patient was in a condition of acute delirium and evidently under the influence of terrifying hallucinations, chiefly of a visual nature. He occasionally talked, but his speech was incoherent and almost unintelligible. The pyrexia increased to 102°, and his pulse varied from 120 to 150. Sedatives were administered but he obtained very little sleep. From June 2nd to the 8th he lay on a water-bed in a very prostrate condition, with a dry tongue and sordes on his lips, and in order to ensure sufficient nourishment he was again fed by a nasal tube. Six ounces of brandy and four ounces of port wine were now given per diem and sleep was obtained by means of two drachms of paraldehyde every night. His pulse, which had always been rapid, was now intermittent and gave cause for anxiety. On the 5th he had a syncopal attack, but recovered with the assistance of a hypodermic injection of strychnine. The muscular system was in a state of hypertonicity and change of position was accompanied by pain. On the 9th the patient again began to take food voluntarily and seemed to be a little stronger. His temperature on this day was 100° and his pulse was 130. On the 12th the temperature returned to normal although the pulse continued to be rapid. In order to ease his back he was now allowed to sit up for an hour occasionally. Mentally he was still in a state of confusion, but he would answer simple questions and appeared to be slowly recovering. On the 15th he woke up in the middle of the night to use his night-stool, and a quarter of

[1] Abstract of a paper read before the St. Mary's Hospital Medical Society on Dec. 11th, 1901.

an hour after returning to bed he complained of feeling very ill and faint. Subcutaneous injections were again administered in order to restore the failing heart, but this time the patient died. A necropsy could not be obtained until 36 hours after death, when the brain presented a congested appearance and there was evidence of minute subpial haemorrhages. The meninges showed no signs of inflammation. Some of the cerebro-spinal fluid was collected in a sterilised bottle, from which cultures of the diplococcus lanceolatus were obtained. Nissl sections of the brain were made later under the direction of Dr. F. W. Mott, but no pathological changes in the cortical cells could be discovered. The other organs were normal.

Acute delirium is generally regarded as the most convenient term to apply to a somewhat rare but fatal group of clinical cases of which the two narrated above are types and which seem to be worthy of record. In all, practically, there is a predisposition to mental instability, hereditary or acquired. Some observers, especially in Italy, have described a bacillus associated with this condition, and others have found various kinds of cocci, whilst in many cases no organisms can be found at all. It seems probable that the toxins arise autogenetically.

Upper Berkeley-street, W.

THE DECAY OF AUSCULTATION AND THE USE OF THE BINAURAL STETHOSCOPE.

BY H. W. SYERS, M.A., M.D. CANTAB.,
PHYSICIAN TO OUT-PATIENTS, GREAT NORTHERN CENTRAL HOSPITAL.

THE student of the present time is in danger of being overwhelmed by the multiplicity of the methods of diagnosing and treating disease. The continual outpouring of new remedies, most of which soon pass into merited oblivion, and the incessant recommendation of new (very often ancient) modes of treatment, chiefly distinguished by their grotesqueness, with all of which he is credited with possessing some sort of knowledge, render his career in the domain of therapeutics a chequered one. But with this side of the question I have now no concern, intending, as I do, to deal only with the method of diagnosis.

Twenty years ago the student was taught to rely almost entirely on the results obtained from the employment of his unaided senses, from the aspect of the patient, his attitude, and his mode of answering questions; in all these ways it was necessary for the learner to draw his own inferences, the use of special instruments being confined to that of the microscope, stethoscope, laryngoscope, and ophthalmoscope. Now, owing to the introduction of complicated blood examinations, of bacteriological methods of diagnosis, of colour reactions with the urine, and of many other proceedings of kindred nature, so much time has to be devoted to special modes of research that there is real danger of the old-fashioned but well-tried methods being relegated to the background in the student's scheme of practical work. To this craze for the employment of laboratory tests and for short cuts to diagnosis I attribute much of the present-day weakness in bedside examination which is, I regret to say, so often in evidence in union with the possession of the highest medical qualifications. These remarks are quite general and apply to no mode of examination in particular.

But, to pass from the abstract to the concrete, I would draw attention to a most urgently required reformation in a very important method of examination, an examination which is undertaken daily and hourly and which lies at the very foundation of clinical work. I refer to the examination of the chest and to the manner in which it is carried out. Until about 20 years ago the condition of the thoracic organs was always investigated by means of the wooden stethoscope, an instrument now almost banished and rarely seen either in hospitals or consulting-rooms. At the time referred to it became the fashion to employ the binaural instrument, at first in quite a tentative manner, then in combination with the use of the wooden instrument, and finally boldly and openly as the only stethoscope worthy the name. Now, were it the fact that the binaural instrument possessed advantages rendering it greatly superior to the wooden one this supersession of the latter would be merely an ordinary instance of the survival of the fittest, and nothing would remain to be said on the use of stethoscopes. But the facts are altogether opposed to this view of the case, and I am convinced that much of the faulty diagnosis of chest disease which is so frequently seen at the present day is the result of the habitual use of the binaural stethoscope. And the reason why this important matter has not attracted attention hitherto is, I have no doubt, the undue weight which is attached to those laboratory methods of diagnosis to which I have already alluded, and which can only result in the production of an unsound, unpractical, theoretical (in the worst sense of the term) type of clinician. The errors which are the direct and immediate result of the constant use of the double stethoscope are of course most obvious in the case of those whose experience of the physical evidence of disease is limited, and is less apparent when the examiner by long practice has become familiar with the physiognomy of disease, so that he is to a great extent free from the necessity of employing an instrument in order to draw his conclusions as to the nature of the illness. But even in this case errors of omission, though not perhaps of commission, are not seldom made through the employment of the binaural stethoscope, while in the hands of the younger brethren faults of both kinds are, to my certain knowledge, only too frequently committed, due entirely to the obstinate use of this most pernicious instrument.

I will now in a few words give my personal experiences in this important matter of diagnosis by means of the ever-popular binaural stethoscope. I have convinced myself that as regards the investigation of the sounds of the heart this instrument is most unreliable, and increasing experience, not only of students' work, but of that of qualified practitioners who are in the habit of employing the double stethoscope, confirms me in the opinion that unless the use of this instrument be discontinued in no long time aortic regurgitation at all events will be a disease which cannot be certainly diagnosed. I do not, of course, refer to those cases in which the diastolic aortic murmur is so obvious that it cannot possibly be mistaken, but to that very large class of murmurs due to incompetent aortic valves in which the bruit is soft, low-pitched, and not by any means easy to hear. It is these murmurs which are constantly passed over, the second sound being described as "clear." The least reflection will convince anyone of the great danger attending the failure to discover such a murmur. In the case of a candidate for insurance much injury may be done to the office and one of which the directors would have every right to complain. It is well known that the soft, low-toned regurgitant murmurs are just those which are found in cases subsequently dying suddenly, the very softness of the murmur being a most unfavourable indication as depending upon a feeble ventricular systole. But it may be urged that in aortic disease the physical signs, apart altogether from the murmur, are so characteristic that it would be impossible for the lesion to be overlooked. I would reply to this objection that in the case of the murmur in question the left ventricle is often scarcely at all hypertrophied, there is no throbbing of the carotids, and the radial pulse may not possess the characters associated with the presence of aortic reflux. As regards the latter, indeed, the qualities of the pulse found in aortic regurgitation are by no means seldom met with in people whose aortic valves are perfectly healthy. It may also be mentioned that even if hypertrophy is present it is often masked by emphysema.

Thus, then, we are reduced to the evidence furnished by the murmur and this alone, in forming the diagnosis of a most serious and fatal form of cardiac valve lesion, and it is neither more nor less than a calamity for such a murmur to be overlooked. Yet to my certain knowledge this happens every day. Now, a murmur may be passed over from the incompetence of the examiner as well as from the unsuitableness of his instrument. In other words, it may be in some cases that a bad workman unfairly complains of his tools. But this argument, in my experience, does not apply to the question now under consideration. Most efficient and even brilliant auscultators I have found to overlook constantly this variety of murmur simply and solely because the binaural stethoscope which they to their subsequent sorrow, had been in the habit of using had misled them. The same observers when immediately afterwards employing a wooden stethoscope have invariably detected the murmur at once and have acknowledged their error, attributing it to its rightful cause—the use of an untrustworthy instrument. This is a certain proof that the slip was the

fault of the latter, not of the auscultator. Again, in the differentiation of mitral murmurs the double stethoscope leaves much to be desired. I have constantly found that systolic murmurs have been described as presystolic when this instrument has been employed, though the converse mistake has not occurred. And in the study of the normal heart sounds I have found the diagnosis of "over accentuation" or "obscurity," neither of which really existed, to be constantly made. As regards the heart, therefore, I look upon the use of the binaural stethoscope as being in every way most objectionable. As regards the diagnosis of heart disease there is no middle course. The double stethoscope should be altogether done away with and abolished off the face of the earth—*Delenda est Carthago.*

Next as concerns the examination of the lungs. Here, again, there is nothing good to be said as regards the use of the binaural instrument in its strictly auscultatory aspect. On the contrary, it is easy to point out numerous and grievous faults. I have noticed that beginners who are learning the elements of diagnosis of chest disease, and who, alas, are freely allowed to choose their instrument, never really appreciate the difference between bronchial, tubular, and cavernous breathing. I do not for a moment deny that this inability may to a certain extent depend upon the want of a keen and correct hearing sense; probably this is so to some extent. But making every allowance on this account, I maintain that this great fault is due chiefly to the most foolish and injudicious laxity which permits to a young and inexperienced student the use of an untrustworthy and deceitful instrument. This failure to recognise fine shades and distinctions of sound is practically always attributed to the defective "ear" of the observer. In nine cases out of ten it is nothing of the kind; on the contrary, it is the result of a defective system of education. the differentiation of friction sounds and of crepitation is by no means easy at any time; when the binaural stethoscope is made use of such discrimination is absolutely impossible. And the tendency of the instrument is invariably to exaggerate the pulmonary sounds, whether healthy or morbid, to a degree which is embarrassing and likely to tend to serious error in diagnosis. Further, the fact of both ears being occupied with the examination renders it impossible to appreciate the significance of what is heard by comparison with the unoccupied ear; this is a very important point and one not adequately recognised.

So much, then, for the disadvantages of the double stethoscope from the point of view of diagnosis. But there is another side to the question. Common sense tells us that it cannot be good for the delicate organ of hearing to be more or less constantly compressed by the ivory heads and the unyielding spring of the binaural stethoscope. For it must not be forgotten that when the instrument is made use of the pressure of the necessary spring is by no means a negligible quantity. Without a certain, indeed, a considerable, tension nothing can be made of the sounds heard within the chest, and I am strongly of opinion that the minimum pressure required for this purpose does not remain confined to the parts on which the ivory heads immediately impinge—i.e., to the outer portion of the external meatus—but that it is transmitted to the rest of the canal and to the membrana tympani. It cannot be denied, therefore, that this pressure kept up intermittently for hours, as is the case with house physicians and others, may be most injurious to the hearing of the observer. I have known of extreme tenderness being the result of the use of the instrument; so marked, indeed, was this symptom that in more than one case experience has taught the sufferer at once to discontinue the use of the instrument, in order that worse evil might be avoided. The delicate organ of hearing is not intended to be abused in this manner, and pain and discomfort in the ear are the first warnings that nature is being trifled with; such warnings are not to be neglected with impunity.

Are there, then, no uses for the binaural stethoscope, or is the instrument to be altogether condemned? It may be said at once that the use of the double stethoscope should be altogether discarded were it not for the fact that it is convenient in illnesses which render it difficult to move the patient in a manner suitable for examination by the wooden stethoscope. In many cases of enteric and other fevers, in pneumonia, and other conditions in which it is undesirable on account of the feebleness of the patient to move him more than is absolutely necessary the binaural stethoscope is often of use in enabling the breath sounds to be heard, when this would be possible only with the greatest difficulty were the wooden instrument made use of. In babies, again, and in young children, the double instrument may be advantageously employed. But used in this way the stethoscope in question is merely an accessory, one to be employed for particular occasions and for special needs. What I protest against, and in the strongest possible manner, is the predilection shown for the binaural stethoscope by the young student who is allowed to make use of it from the very commencement of his clinical work, so that he is totally unable to appreciate the advantages which appertain to the employment of the old-fashioned instrument. No words can condemn too strongly this adoption of the binaural instrument which is, I am convinced, the cause of much of the indifferent diagnosis of chest disease so often observed at the present time.

Wimpole-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

FOREIGN BODY A LONG TIME EMBEDDED IN THE HAND.

By L. K. HERSCHEL, M.D. VIENNA.

THE following short account of a case in which a fragment of glass remained embedded in the muscles of the hand for nearly three years may be of interest as showing the usefulness of non-interference when no danger can arise from waiting.

In March, 1899, the patient, who was engaged in the analysis of fats in the chemical laboratory of the University of Jena, unfortunately broke a glass jar while forcing a stopper into it. The palm of one of his hands was wounded in a line with the middle finger at a point nearly opposite to the middle of the metacarpal bone of the thumb. A jet of blood immediately spurted out as high as the ceiling and an artery was ligatured by a surgeon. A branch of the radial nerve was also severed, for numbness at once appeared on the inside of the thumb and on the outside of the forefinger. (This still continues to a slight extent.) At the time of the accident the surgeon who tied the artery discovered no foreign body, but an x-ray photograph taken five days afterwards showed a shadow of an abnormal character. There were, however, no urgent symptoms; the wound healed without suppuration, and in order that the ends of the artery might have time to consolidate the surgeon advised non-interference. After three weeks, the appearance of the hand being quite normal, the surgeon endeavoured to remove the foreign body which from the x-ray photograph was supposed to be just under the surface, but the attempt was unsuccessful. All remained quiet until a few months ago. The patient, who was a violinist, had given over playing on account of the injury, but on resuming it he occasionally had painful sensations in the back of his hand in the triangle between the metacarpal bones of the thumb and forefinger. In the first week of January, 1902, he felt considerable pain in this triangle when washing and drying his hand, and a red spot formed on the back of the hand almost on a level with the carpo-metacarpal articulation. On Jan. 10th the skin gave way at this spot and a sharp point protruded; two days afterwards, as it was coming more and more to the surface, the patient seized it with a pair of forceps and drew out a fragment of glass five-eighths of an inch long. No pain or difficulty was experienced in doing this and the wound closed without suppuration.

Bordighera.

A CASE OF SYPHILITIC PNEUMONIA.

By JOHN GEORGE GIBBON, M.D. DUB.

THAT the following case was one of syphilitic pneumonia there can, I think, be little doubt. The course of the temperature was interesting as most of the few authorities to whose works I have been able to refer mention that little or

no fever is met with in this disease. Possibly the previous history of slow continued and remittent fever may have had some influence on the temperature.

The patient, an adult male, was admitted to hospital on Nov. 18th, 1901, and came under my care on Dec. 6th. With the exception of his temperature chart there was no record of his symptoms during that time. The temperatures recorded on the first three days in hospital were as follows:—Nov. 18th: evening, 104·6° F. Nov. 19th: morning, 104·6°; evening, 104·8°. Nov. 20th: morning, 103·2°; evening, 104·4°. From this date there was a steady decline till Dec. 5th when the temperature in the morning was 100·8° and in the evening it was 98°. In May, 1899, he had contracted primary syphilis at Aldershot, and during April, 1900, was under treatment for secondary syphilis at Malta. During his service in Malta he was subsequently treated for remittent fever and slow continued fever. When he came under my care he presented the following appearance. The face was thin, pale, and slightly cyanosed; there was constant cough with very little expectoration, the sputum in 24 hours only amounting to about one ounce, chiefly mucus, and on a few occasions a slight reddish tinge was noticed. Both lungs were dull on percussion, particularly at the bases, with great resistance to the finger; vocal resonance was increased; tubular breathing was heard over the bases and there were a few râles and a large number of rhonchi. Over the apices and front of the chest the breath sounds were more bronchial and the rhonchi were less. The respirations ranged between 20 and 26 per minute. The pulse-rate was 100. The heart sounds were regular but weak. The bowels were moved regularly twice a day. There was delirium at times. The temperature in the morning was 99·4° and in the evening it was 97·8°. On Dec. 7th it was 101·2° in the morning and 101·0° in the evening. From Dec. 10th to the 28th inclusive the temperature did not rise above 98·8°, except on the evenings of the 11th, 13th, 16th, and 17th.

On Dec. 13th the patient was put on 15-grain doses of potassium iodide three times a day and daily inunctions of mercury. On the 24th the temperature had practically been at normal for some days; the cough was almost gone; percussion over both lungs was normal and there were no rhonchi or râles. The man was quite sensible; he slept well and was able to sit up. On the 27th the cough had become more troublesome again, and I at the time attributed this to his bed being rather near a draughty window. He still seemed to be in good spirits and was quite sensible. On the 29th the temperature rose to 103·2°. The face became somewhat cyanosed and the old symptoms in the lungs returned. In spite of the dose of potassium iodide being increased to 30 grains he gradually passed into a typhoid state and died on Jan. 7th, 1902. The respirations reached 55 per minute three days before death, but they dropped on the 6th to 22.

It is a matter of great regret that no post-mortem examination was allowed. The diagnosis was founded on the distinct history of syphilis and the remarkable clearing up of all symptoms under anti-syphilitic treatment. The secondary and fatal attack showed the only temporary subsidence of the disease under treatment.

Mullingar.

A NOTE ON A FAMILY EPIDEMIC OF IMPETIGO CONTAGIOSA BULLOSA ORIGINATED BY PEDICULI CAPITIS.[1]

BY GEORGE PERNET, M.R.C.S. ENG., L.R.C.P. LOND.,
LATE PATHOLOGIST, BLACKFRIARS HOSPITAL FOR DISEASES OF THE SKIN.

WHILST in charge of the Skin Department of University College Hospital last September four children of the same family were brought to the out-patient room. I will shortly describe the cases in the order in which they were observed.

CASE 1.—The patient was a boy, aged two years and 10 months, with an eruption of two days' duration. It had commenced as a water-blister on the left forearm and had then spread to other parts of the body, trunk, &c. The mother, an intelligent woman, stated that the lesions commenced as vesicles of the size of hemp seeds which rapidly enlarged, attaining the diameter of a pea and later of a halfpenny, when they burst. As a result of this there were found on examination about a dozen recent superficially excoriated areas, about one inch in diameter, and looking very like what is observed in involuting pemphigus neonatorum. On the outer side of the left leg there was a vesicle of the size of a lentil, with clear contents and an erythematous areola. The mother said that the child had been feverish; on taking the temperature, however, it was found to be only 99·6° F.

CASE 2.—The patient was a boy, aged eight years. He had only been affected since the previous night, when a water-blister of the size of a pea was noticed on the back of the head. It was stated to have burst and the lesion to have since extended. When I saw him there was a crusted, superficially excoriated area a quarter of an inch in diameter, with surrounding redness.

CASE 3.—The patient was a girl, aged 13 years. In her case the eruption had been present for 10 days. It began on the right thumb as a scratch, came up as a blister, and burst. Three days later the face became involved. I found a reddened circular area of the size of a sixpenny-piece over the metacarpo-phalangeal joint of the right thumb. On the face there were several slightly crusted, reddened areas of the size of hemp seeds, some of which had coalesced, forming little patches each of the size of a finger-nail. These, the mother stated, had been originally vesicular. The child had been away in the country for a holiday with the patient in the following case.

CASE 4.—The patient was a girl, aged 10 years. Her eruption had been present for 10 days. It began as a white blister containing water on the lobe of the right ear. There were a reddened circular dry area one inch in diameter on the dorsum of the left hand, a similar one about a quarter of an inch in diameter on the right wrist, and a few drying-up pustules about the occiput and the right ear. The pustular lesions of the occiput led me to examine for pediculi. I found numerous nits. This gave the key to the whole thing. There were no pediculi in the other children.

In connexion with the above I may mention that I have seen pemphigus neonatorum occur where the three other children of the family all had marked impetigo contagiosa of the ordinary type. I had no doubt in that case that the infant had contracted the bullous eruption from the other children.[2] I was asked to see the child because it was thought to be a case of congenital syphilis. I found that the family lived in one upstairs room and the mother assured me that the house was quite healthy. I have also seen pemphigus neonatorum in sucklings whose mothers were suffering from abscess of the breast.

In the cases of bullous impetigo contagiosa which I have described above the youngest child had best presented the bullous type, no doubt on account of the greater delicacy of the skin. In him the lesions looked like what is seen in subsiding pemphigus neonatorum and the lesions had not the crusted appearances usually associated with ordinary impetigo contagiosa, whereas some of those in the older children had.

I am indebted to Dr. H. Radcliffe Crocker for kindly allowing me to make use of the cases.

Upper Gloucester-place, N.W.

[1] A paper read before the Society for the Study of Disease in Children on Nov. 15th, 1901.

[2] See also Matzenauer on the "Identity of Impetigo Contagiosa and Pemphigus Neonatorum" in the Wiener Klinische Wochenschrift, No. 47, 1900.

SMALL-POX AND ISOLATION HOSPITALS.—The following municipal authorities are either discussing sites or have decided to erect small hospitals:—Pinner Parish Council (small-pox), Staines Rural District Council (temporary small-pox), Warmley (isolation), Tredegar (cottage), Easingwold (isolation), Launceston Town Council (isolation), Haywards Heath (small-pox), Canterbury (extension of nurses' quarters at the sanatorium), Oswestry District Council and Town Council (joint isolation), Barrow County Council (small-pox), Kingswood Rural District Council (isolation), Beaconsfield Urban District Council (isolation), Bideford (new infirmary at workhouse, £4000), Berwick Sanitary Authority (infectious diseases hospital), Lutterworth (isolation), Dunstable Town Council (isolation), Wellingborough (temporary small-pox), Luton Rural District Council, and Eaton Bray District Council (isolation), Slough Guardians (isolation), Towcester (small-pox), Thetford (isolation, borough proposed joint scheme abandoned), and Chard Rural District Council and Town Council, Crewkerne Urban District Council, and Ilminster Urban District Council (joint isolation).

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

LONDON TEMPERANCE HOSPITAL.

A CASE OF PERFORATED GASTRIC ULCER; LAPAROTOMY; SUCCESSFUL CLOSURE BY SUTURE; DEATH EIGHT DAYS AFTER FROM HÆMORRHAGE FROM DUODENAL ULCER.

(Under the care of Dr. W. J. COLLINS.)

IN one-fifth of the recorded cases of perforating gastric ulcer two perforations are present, but it is very rare for a duodenal ulcer to perforate at the same time as an ulcer of the stomach.[1] Still more rare is it for a duodenal ulcer to perforate some days after the suturing of a gastric ulcer, though it is not so rare for a second gastric ulcer to perforate a few days after the first perforation. Inasmuch as the etiology of duodenal ulcer seems to be similar to that of ulcer of the stomach we need feel no surprise at this occasional coincidence. In the following case the onset of the duodenal perforation does not seem to have been sufficiently acute to render a second laparotomy advisable.

A fairly nourished but rather anæmic young woman, aged 23 years, who had had attacks of dyspepsia but gave no history of hæmatemesis, was admitted to the London Temperance Hospital on the evening of April 8th, 1901, about 12 hours after a sudden and violent attack of pain in the abdomen accompanied by marked collapse. On admission the abdomen was tense and tender in the epigastric region; breathing was thoracic. The temperature was 101° F. and the pulse was 128 and running. Dr. W. J. Collins saw her at once and decided to open the abdomen, diagnosing the presence of a perforated gastric ulcer. Under chloroform the abdomen was opened in the mid line above the umbilicus; gas escaped on incising the peritoneum. The index finger detected a roughened surface and edge high up on the anterior surface close to the cardia. By retracting firmly the left lobe of the liver and the costal cartilages the ulcer was brought into view surrounded by shaggy yellow lymph. The contents of the stomach were escaping into the peritoneum. Three Lembert's sutures were with a little difficulty inserted and then two circular sutures were put in and the ulcer was securely closed. The peritoneum was cleansed as effectually as the desperate condition of the patient permitted and a gauze-drain was inserted down to the sutured ulcer.

On April 9th the patient was fairly well; there was no pain and the abdomen was not distended or tender. The temperature was 101°. She was fed by the rectum. On the 10th she slept for five and a half hours. She was thirsty. A quarter of a grain of morphia was injected hypodermically. The breathing was rapid. On the 12th some turbid serum from the wound was found on the dressing. The patient had an attack of parotitis (right). The bowels were opened. On the 13th she said that she felt well; the parotitis was less; the discharge from the wound was rather offensive; the wound was swabbed out with carbolic lotion. On the 14th a dark motion was passed (melæna). The discharge from the wound was purulent. On the 15th anæmia was more marked. The patient was restless and breathless. A tar-coloured motion was passed. On the 16th the stool contained blood-clots. The pulse was very rapid. A copious hæmorrhagic motion was passed and death took place at 3.15 P.M.

Necropsy.—The whole of the intestines contained blood. Half an inch from the pylorus there was a duodenal ulcer of the size of a five-shilling piece with undermined edges and covered with blood-clot; the walls of the gut were very thin. The stomach was coated with shaggy lymph round the cardia and there was a small subphrenic collection of pus. The sutures were not seen; the site of the perforated ulcer was watertight and on the inner surface was seen a dimple-like depression measuring one and a quarter inches by a quarter of an inch.

[1] Diseases of the Stomach, by Robson and Moynihan, p. 151.

LEEDS GENERAL INFIRMARY.

TWO CASES OF VOLKMANN'S CONTRACTURE.

(Under the care of Mr. WARD.)

WHEN the exact etiology and pathology of a morbid condition have not been fully ascertained it is far better in naming it to choose a title which is as little connotative as possible. Therefore the name "Volkmann's contracture" (although there is no doubt that as a rule it is objectionable that a disease should be described by an individual surgeon's or physician's name) is far more suitable for the condition which was first described by that surgeon than "ischæmic paralysis," which attempts unsuccessfully to describe its cause and its nature. The two cases of this condition described below are a useful addition to Mr. L. S. Dudgeon's paper in THE LANCET of Jan. 11th, p. 78. It will probably be found that the condition is fairly common, but its apparent unsuitability for surgical treatment has hitherto prevented most of these patients from entering the hospital wards. It is highly desirable that many cases should be recorded in order that we may be enabled to form a comparison between the two chief methods of treatment—namely, tendon-lengthening and massage accompanied by electrical treatment.

CASE 1.—A young woman, aged 21 years, a weaver, was admitted as an in-patient of the Leeds General Infirmary under the care of Mr. Ward on Jan. 24th, 1900, complaining of stiffness and weakness of the left forearm and hand, with inability to straighten the fingers and wrist, so that she was incapacitated from pursuing her occupation. Six weeks previously she sustained an injury to the forearm in the following manner. She was a power-loom weaver and while at her work she thoughtlessly put her hand into the loom to adjust something in motion. The advancing beam caught her arm and crushed it momentarily against the front frame of the machine, in a space said to be reduced to little more than an inch in width. The arm was instantly released as the beam receded. The arm swelled very much almost immediately. The skin was not broken. She was seen by a medical man who found that there was no fracture and the limb was simply placed in a sling and she supposed that her fingers rested comfortably bent. The swelling subsided slowly and it was not until about three weeks afterwards that attempts were made to straighten the fingers, when it was found to be impossible. These attempts had been steadily persevered in up to the time of her admission, but in spite of them she had grown a little worse. So far as she could tell, sensation had never been interfered with, but she took no special notice of this point just at first, during the worst of the pain and general disturbance. As the swelling subsided a depression was observed on the front of the forearm, about the middle, more marked towards the ulnar side. Briefly, the condition was as follows. The wrist and fingers could not both be straightened at the same time. If she extended the wrist the fingers flexed at the inter-phalangeal joints, the metacarpo-phalangeal remaining extended. If she extended the fingers the wrist flexed to an angle of about 60° with the axis of the limb (Fig. 1), and somewhat more if the middle finger was forcibly extended till it was quite straight. The thumb was not affected. Sensation in the affected fingers was normal. Immediately below the middle of the forearm was a well-marked scar-like depression of the skin, although there was no actual scar. Beneath this depression was a leathery induration apparently in the substance of the muscles. Movement of the fingers showed the depressed patch of skin to be somewhat adherent to the deeper parts. A skiagram revealed distinct thickening and blurring of the interosseous border of the radius, but nothing to indicate any fracture.

Operation was performed on Feb. 12th. The tendons were exposed by turning up a rounded flap just above the annular ligament. The tendons of the ring finger were split for a length of two inches and divided in opposite directions at opposite ends of the split. The finger was then straightened and it was found that the overlapping was reduced from two inches to a quarter of an inch, which was much more than was expected, though, of course, some of this was what may

be called normal shortening which occurs when the tendons of healthy muscles are divided. The remaining tendons were then divided similarly, their corresponding ends being loosely tied together for identification until their suture was completed, fine silk being used for this purpose. The wound was closed without drainage and the fingers were put up in

FIG. 1.

Showing flexion of wrist on extension of fingers.

slight flexion. For some weeks after movement was commenced, and even after it became free and unrestricted in range, the muscular power remained very feeble, but eventually it began steadily to improve and when the patient was last heard of she had resumed work with perfect movement of the fingers and a fair grip.

CASE 2.—A boy, aged 12 years, was admitted into the Leeds General Infirmary on Jan. 30th, 1901, with a crippled and useless hand the result of an injury received three years before. He fell off a ladder and "broke the right arm between the wrist and the elbow." Splints were applied in front and behind and were kept on for about *10 weeks* (?). At the end of that time, when the splints were removed on account of offensive discharge from beneath them, there was a large deep sore in front of the elbow and the fingers were bent and stiff and useless. The wrist and elbow-joints were also bent and stiff. The boy stated also that "the skin came off the back of the fingers

FIG. 2.

Showing hyper-extension of metacarpo-phalangeal joints.

and the nails came away and there was very little feeling in the fingers—none at all in the forefinger"; but he was not very clear about dates and sequences. The fingers slowly healed and became less numb and by degrees he could move the elbow again, but the stiffness of the wrist and fingers got no better—perhaps it grew a little worse—and for the last two years the hand had not altered except that from time to time the backs of the fingers became sore. On admission neither the wrist nor the fingers could be straightened to any appreciable extent, but the metacarpo-phalangeal joints were distinctly hyper-extended. (The attitude is well shown in Fig. 2.) The thumb was stiff and contracted at the inter-phalangeal joint. The fingers were smooth, shiny, and livid, and on the dorsum of the second phalanx the index third and fourth showed irritable-looking tight scars of former ulceration. Sensation was much impaired over the median nerve distribution in the fingers and to a less extent in the ulnar. The radial nerve was unaffected. There was a large and somewhat contracted scar in the middle of the forearm just below the bend of the elbow. It was about one and a half inches wide by two inches long. (Unfortunately, the electrician's reports in the two cases are not forthcoming. Being written on much smaller paper they have been lost.)

A similar operation to that in Case 1 was performed on Feb. 8th, except that the tendons were exposed by a longitudinal incision extending five inches upward from the annular ligament, on the radial side of the palmaris longus tendon, which was much contracted and was cut away; and the flexor longus pollicis also required lengthening. On the sixth day the dressing was changed on account of a rise of temperature to 99·8° F., unaccompanied by pain or any other disturbance, and a small superficial suppuration was discovered. The temperature immediately fell again to normal and thenceforward the progress of the wound was uneventful. In this case the split tendons were cut flush and sutured end to end, and the hand was secured with the wrist in slight flexion. Owing to the occurrence of the suppuration passive movement was postponed and shortly after it was commenced the boy's father removed him from the hospital in consequence of his outcry about the discomfort of the passive movement. He has been lost sight of.

Remarks by Mr. WARD.—The practical importance and the considerable interest, both clinical and pathological, of the condition, to which further attention has been drawn by a valuable paper contributed to THE LANCET of Jan. 11th, 1902, p. 78, by Mr. L. S. Dudgeon, encourages me to hope that reports of additional cases may not be without value. I therefore record brief histories of the two cases of this affection most recently under my care, and I propose to supplement them by a few remarks upon some of the views which have been propounded as to its causes and its nature, and upon the indications for, and the results of, active surgical treatment. My personal experience of the affection goes back well over 20 years, long before, I must confess, I knew of Volkmann's original description. Impressions are fallacious, I know, but if I were to say that I had seen an average of one case a year since 1877 I do not think I should be overstating.

The two cases published by my colleague, Mr. H. Littlewood,[1] about two years ago, and the two which I report, were operated upon in the Leeds General Infirmary between Dec. 5th, 1898, and Feb. 8th, 1901, a little over two years, and I do not think that this much over-represents the frequency with which these cases have come up during the last 25 years to consultations of the surgical staff; the odium, generally unmerited, of the casualty-room, and the despair of the surgeons.

For a considerable number of years I believed that the condition was the result of one uniform cause—that is, fracture at or near the lower epiphysial line of the humerus treated by the application of an anterior rectangular splint, and it is not until comparatively lately that I have known or heard of any exception; indeed, the history might almost be stereotyped as follows: "A child from five to eight years of age sustains a severe injury to the elbow which causes swelling; a deformity which includes some increased prominence of the olecranon and shortening of the forearm; abnormal mobility in certain directions, and crepitus. An anterior (and perhaps a posterior) rectangular splint is applied and the child is allowed to go home. No excessive amount of pain is complained of, or if so it is disregarded, and the child is not brought up again till the blue and swollen condition of the fingers shows that something is seriously wrong. Then the splint is removed, disclosing an area indicating severe pressure, either a slough or a sore, over the fleshy bellies of the flexor muscles. The splint cannot be re-applied and the arm is placed in a sling. With the subsidence of the swelling the bony deformity

[1] THE LANCET, Feb. 3rd, 1900, p. 290.

about the elbow becomes more distinct, especially an anterior prominence towards the inner side just above the joint; and presently it is noticed that the fingers are bent and stiff and that they cannot be straightened without coincident bending at the wrist. The fingers are smooth and glossy, with varying degrees of anæsthesia, and (in most cases) ulcers appear on the dorsum of the second and third phalanges." I believe that this history still fits the majority of the cases, but now we know that well-marked exceptions must be admitted.

Speaking from recollection, the earlier cases were all of the severer type, with considerable anæsthesia; frequently with scars or ulcers over the dorsum of the second and third phalanges; usually a scar on the front of the forearm, and such a degree of contracture that any attempt to straighten the fingers simply increased the flexion of the wrist without much effect upon the fingers themselves.

This common occurrence of anæsthesia and trophic ulcerations among the earlier cases led us at first to the opinion that the whole condition was due to splint pressure upon the ulnar and median nerves, but the later appearance of cases possessing unimpaired sensation and preserving the integrity of the intrinsic muscles of the hand led to the surrender of this opinion and to the adoption of the view that local damage of the muscles from severe and prolonged pressure just short of the production of actual gangrene of them, but resulting in destruction of the muscle elements and their later substitution by contracting fibrous tissue, must be regarded as the real and primary cause of the shortening. It is much to be regretted that these earlier cases were not carefully and permanently recorded, but unfortunately, owing to the chronic circumstance of pressure on our beds, they were not taken into the wards; for the failure of a few attempts at forcible extension under anæsthesia, together with the apparently hopeless stationary condition of one or two cases which were kept under occasional observation for a year or two, had developed a discouraging conviction that nothing more could be done for them as in-patients

It will be seen from the history of the accident and its treatment in Case 1 that ischæmia cannot be accepted as the only, the invariable, precursor of the shortening of the muscles. The contusing force was a sudden and momentary one; neither splint nor bandage was applied from beginning to end; and as the injury was at a distinctly lower level than usual it is hardly likely that the muscles could be starved in their main bulk from a protracted interference with their blood-supply. The case reported by Mr. H. L. Barnard[2] emphasises, but not quite so forcibly, this point. On the other hand, Mr. Littlewood's argument from his case where the splint sore was on the back of the forearm is not very strong, for here the pressure is taken by the ulna, not the muscles, and it might fairly be contended that ischæmia of the flexor muscles was caused by the bandages with which the splint was secured, assuming that there was not an anterior splint as well.

The remarks which I have to offer on the two cases recorded above will not, I fear, contribute anything very material to our knowledge of the injury, but for some time yet it may be worth while to report cases as they occur, and especially, perhaps, any which have been subjected to active treatment or which have been known to recover without it.

It is desirable that some confusion and diversity of opinion should, if possible, be cleared up and reconciled. Compare, for example, the two following very positive statements. "It is a result of prolonged fixation of forearm fractures by any form of apparatus which intercepts the free circulation of the blood through the muscles and nerves of the part" (Anderson). "I do not believe that splint pressure has anything to do with the deformity. It will be found that the injuries have been severe and that the flexor muscles have been torn. The torn muscle is replaced by fibrous tissue, and this, contracting, is, I believe, responsible for the deformity" (Littlewood). The first of these statements, except for the error as to the usual seat of the fractures, still remains, in my opinion, the correct explanation of a large majority of the cases, although it must be understood, of course, that it is the pressure on the muscles which is the direct cause of the changes leading to contracture, and not the pressure upon the nerves, which gives rise to those frequently associated manifestations which are not an essential part of the affection.

[2] THE LANCET, April 20th, 1901, p. 1138.

Case 1, here reported, seems to prove, however, that it is not the explanation of all cases. The simple fact is that the removal or destruction of a length of flexor muscle and the substitution for it of scar tissue may be brought about in a variety of ways.

I still think, in spite of Mr. Littlewood's opinion to the contrary, that in most of the cases where it ensues upon fractures about the elbow it is the unfortunate result of the treatment and not of the original injury. I do not admit that these injuries about the elbow, whether dislocations backward or fractures in the lower end of the humerus, cause such extensive lacerations in the bellies of the flexor muscles as will give rise to serious contracture and structural shortening. If that were so, I fear that Volkmann's contracture would unhappily be far more common than it is, for I have a very decided recollection that some of the earlier cases which I have seen were regarded in the first instance as injuries of no great gravity and not serious of their kind. The lump which the indurated patch sometimes makes in the muscles is found immediately beneath the pressure scar or sore when such exists (Mr. Littlewood's case of dorsal scar notwithstanding).

If the supporters of the "ischæmic" theory and their opponents would each admit that the others are right the ground would be cleared for an understanding. Personally, I am not sorry that the words "ischæmic" and "palsy" are dropping out of the definition. "Volkmann's contracture," although open to the general objection to the use of proper names, is a concise and sufficient label and it involves no theories. The more detailed and descriptive definition given by Mr. Dudgeon is very satisfactory.

A word or two about the "swelling, bony in character, sometimes found at the lower end of the humerus, generally at the inner side," which is occasionally referred to as if it were part of the affection. Of course it is not. It is only present in those cases which are associated with fracture or epiphysial separation at the lower end of the humerus, and is, in fact, the lower end of its diaphysis, from which the lower fragment or the epiphysis has been displaced backwards. It is to be found in most cases of faulty union at this point, whether associated or not with Volkmann's contracture, with which it has no essential connexion. When it is of such degree as to cause mechanical locking and seriously to limit the flexion of the elbow it may readily be removed by the chisel—an operation which I have several times practised with satisfactory results.

The prognosis in Volkmann's contracture is an important matter, for it has a significant bearing upon the question of treatment. Here in Leeds, in spite of the very confident statements made by some authorities that many of the cases eventually recover, we have been accustomed to regard them as hopeless, and certainly some of them have remained under observation for considerable periods without a sign of improvement. If the pathology of the condition is to be regarded as identical with that of the type of torticollis with which comparison has been made this unfavourable view must be admitted to be the correct one. But one somewhat pertinent fact may be noticed. I have never seen or heard of any adult with Volkmann's contracture due to, and persisting from, injury in childhood; and, moreover, although some of our cases were kept under observation for considerable periods, none of them were kept long enough to be accepted as conclusive upon the point.

If it can with any confidence be anticipated that cases will recover under the treatment advocated and carried out by Mr. Dudgeon few surgeons will, I imagine, submit patients to an operation of appreciable uncertainty and in which failure would probably leave greater crippling than before. It is difficult to understand, however, by what natural processes the damaged muscles themselves can undergo repair—at any rate, in those cases in which there is considerable destruction and actual loss of substance, and such cases make a large percentage of the whole.

With regard to the technique of the tendon-lengthening operation there are a few points of detail which deserve comment. 1. I quite agree with Mr. Dudgeon that cases should not be subjected to operation until it is reasonably certain that the contracture has reached its limit. 2. To determine how much lengthening may be necessary in a given case, so as not to denude and to split all the tendons more than can be avoided, it is an advantage to select the tendons of one finger, say the ring finger, to make a two-inch split, to straighten the finger, to observe how much of the overlap has been taken up, and to divide the other tendons accordingly. In the worst cases the wrist cannot be straightened

until all the tendons have been divided. Here the additional amount to be allowed for extension of the wrist must be estimated by the judgment of the surgeon. 3. With the fingers and wrist straightened, should the tendons be secured in some degree of tension or with the muscles in complete relaxation? It might be argued that the reproduction of something like the normal muscular tone and tension is more likely to preserve the greatest possible amount of muscular power—that to leave the muscles flaccid involves a certain further degree of contracture before effective voluntary contraction can come into play. On the whole, however, I am inclined to think that it is better not to suture under tension. 4. I was tempted in the second case, after determining the exact amount of lengthening required, to cut the ends flush at slightly different levels for the different tendons, and to suture end to end with the object of securing a much neater junction with less risk of subsequent adhesions and tethering. In this case some suppuration occurred and it caused me much more uneasiness as to the union than if the ends had been left overlapping. 5. I believe that the best position, until passive movement is commenced, is one of slight flexion of the fingers. If the fingers and the wrist are in complete extension it is obvious that no further movement is possible in the only direction which is effective for breaking down adhesions. And if the lengthening has been sufficient, and the operation not performed too early, this slight flexion is not likely to predispose to further contracture.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Exhibition of Specimens.

A LABORATORY meeting of this society was held on Feb. 4th, Mr. W. WATSON CHEYNE, the President, being in the chair.

Dr. NORMAN DALTON showed sections of a Syphilitic Patch on the Pharynx showing Hyaline Fragmented Bodies. The patient was undoubtedly syphilitic and died from phlegmonous inflammation of the fauces. One or two white patches were found on the pharynx. These proved to be patches of acute inflammation with infiltration of leucocytes as deep as the muscular layer, and around the vessels a fibrinous exudation. In the connective tissue round the mucous glands numerous hyaline bodies were seen. Many of these when examined with the higher powers of the microscope were found to be broken up into small rounded or slightly angular fragments. They stained deeply with eosin and the orange of Ehrlich-Biondi's stain. The hyaline bodies were also found between the columnar epithelial cells which lined the gland acini. Their position both outside and inside the glands suggested that they were once amœboid cells. There was some doubt as to whether the nuclei which appeared under the low power to be in the bodies really belonged to them. Dr. Dalton thought that they did, but that the nuclei were pushed to the extreme periphery of the cell by the swelling of the cell protoplasm which had undergone the hyaline change. He thought that the bodies were connective-tissue corpuscles which had undergone a hyaline degeneration like Zenker's degeneration of muscle, because (1) they appeared to have been once amœboid; (2) their nuclei (allowing that the nuclei really belonged to them) were like those of young connective-tissue corpuscles; and (3) their close resemblance to certain hyaline bodies which Unna had described in connexion with actinomycosis and which he considered to be degenerated plasma cells (the latter being derived from connective-tissue cells). Dr. Dalton also showed the same hyaline bodies in an ulcerated vaginal wall from a case of syphilis. He thought that the degeneration was produced by the syphilitic toxins in these two cases.

Dr. ARTHUR WHITFIELD showed a short series of Specimens stained with the Methyl Green Pyronin Stain of Pappenheim. The series comprised sections of Paget's disease, actinomycosis, syphilis, and a piece of granulation tissue from the interior of an inflamed knee-joint. The object of the stain was to differentiate the cells named by Unna "plasma cells," which were probably not in all cases identical with those described by Waldeyer under the same name. The method of staining was published in the *Monatshefte für praktische Dermatologie*, vol. xxxiii., No. 2, and in Virchow's *Archives*, vol. clxvi., No. 3. Shortly stated, the method depended on the fact that methyl green, although a basic stain, was limited in its action to the staining of chromatin, while pyronin, also a basic stain, showed a strong affinity for basophile protoplasm. It was thus found that on staining sections by this method one obtained a clear bluish-green colouration of the nuclei of the plasma cells while the protoplasm became bright red. The reaction was identical in the case of the hæmic lymphocytes, but the rim of protoplasm was much smaller. The stain was therefore not capable of distinguishing these cells from one another, but was extremely useful in the study of the cells in inflammatory infiltration to enable the plasma cells to be picked out rapidly, and the nucleus of the plasma cell was distinguished clearly from that of the ordinary lymphocyte. As regarded the factors influencing the certainty of the stain he had found that the stain worked best in specimens that had been hardened in alcohol, that it was also fairly satisfactory in sublimate specimens, but that formalin specimens, although allowing the stain to be used, showed a certain mingling of the colours, the protoplasm becoming slightly purple and the nucleus violet.

Dr. R. T. HEWLETT described some Experiments which he had performed to test whether Diphtheria and Tetanus Antitoxins were absorbed from the Stomach or Rectum. Guinea-pigs were fed with varying amounts of antitoxin and were then injected with a single acute lethal dose of diphtheria or tetanus toxin. In no instance was the slightest protection manifested. Similarly, rabbits received rectal injections of diphtheria or tetanus antitoxin on several successive days, and were then inoculated with minimal doses of toxin, again with the result that not the slightest protection had been conferred by the rectal injections. Dr. Hewlett pointed out that although these results were not new it did not seem to be known generally that antitoxin was not absorbed by the mucous membrane of the stomach or rectum, and reports were frequently being published in the medical journals of cases treated with antitoxin by the mouth.

Dr. C. W. DANIELS showed a specimen of Avian Filaria from British Guiana, sent to him by Dr. C. R. Kennard. The series of embryos were from five species of birds and two of these had filaria of two species, so that in all there were embryos of seven species of filaria. The adult forms, male and female, of three species only were found. The embryos in most species differed markedly from each other. They varied in size, the smallest being only 65μ in length whilst the largest was 256μ. Only one species had a sheath. They differed also in relative proportions, in shape, and particularly in the character of the tails. As regards structure, some stained more readily than others and the nuclei forming the central mass of the embryo was packed more closely in some species than in others. In most filarial embryos there was a gap in the central nuclear mass and sometimes two gaps. The position of this gap and its size were fairly constant in the different individuals of each species. In that of the ostinops it was of unusual size, being about 10μ in length. As regards the adults, the male of the filaria of the crotophaga ani was remarkable in that it was much longer than the female, whilst as a rule to which exceptions were rare the female was the larger. There were two unequal spicules in the male. In the crotophaga ani the adults of two species differed considerably though the embryos differed but slightly. In both there were two unequal spicules, the longer being situated anteriorly. In the smaller of these males the tubular nature of the longer spicule was well shown as well as its connexion with the tubular expansion in the interior into which the vas deferenr opened, as the whole of this combined tube was occupied by an air bubble. The adults were found, in the case of the ostinops, in a cyst connected with the craw. In the crotophaga (old witch) they were beneath the loosely attached mucous membrane of the craw. Whether these avian filaria caused any symptoms was unknown. The life-history and intermediate hosts had not been traced. The situation of the adult worms in connexion with the alimentary canal was of interest and suggested that the worms were introduced through the mouth, and in this connexion it was worthy of note that in two at least of the human filariæ the adults were found near the stomach and in these two all attempts at infection of many species of mosquito and of some other insects had failed.

Dr. H. S. WILSON showed some Gelatin-stab Cultures of Anthrax and described the conditions under which the characteristic "inverted fir-tree" or arborescent appearance of stab-cultures of the bacillus were best produced. He had made a few gelatin-stabs under varying conditions of medium, of bacillus, &c. Three strengths of gelatin had been used—5 per cent., 7 per cent., and 10 per cent. Two agar-cultures of anthrax obtained from the blood of an inoculated guinea-pig a few minutes after death were grown at 37° C., one for 20 hours and the other for about 70 hours. The 20 hours' culture was seen on microscopical examination to consist mainly of bacilli, whereas the 70 hours' growth consisted almost entirely of free spores. The stab-cultures were grown for eight or nine days at from 18° to 20° C. and then fixed with formalin vapour. The following results were obtained. 1. *10 per cent. gelatin.*—(*a*) Bacilli: liquefaction cup and streak, but no arborescence; and (*b*) spores: liquefaction cup and streak, but no arborescence. 2. *7 per cent gelatin.*—(*a*) Bacilli: liquefaction cup and streak with slight arborescence. (*b*) Spores: no liquefaction cup, but a streak with well-marked arborescent growth. 3. *5 per cent. gelatin.*—(*a*) Bacilli: liquefaction cup and an arborescence better marked than in the case of the 7 per cent. gelatin. (*b*) Spores: no liquefaction cup, but a very fine arborescent growth. In addition to the above, stab-cultures were made in 5 per cent. and 7 per cent. gelatin from bacilli and spores, and were grown in an atmosphere free from oxygen by Buchner's method. In no case was there any liquefaction or any attempt at arborescence. The point, therefore, to which he called attention was that to produce the anthrax "fir-tree" it was useless to make stab-cultures in 10 per cent. gelatin, the strength generally employed in laboratories, and the best strength to use was 5 per cent., and apparently a freely sporing culture gave more satisfactory results than did one containing few spores.

LIVERPOOL MEDICAL INSTITUTION.

Gall-stones with Chronic Intestinal Obstruction.—Intestinal Anastomosis.—Physics of the Mitral Regurgitant Murmur.—The Treatment of Cancerous Affections of the Skin by means of X Rays.

A MEETING of this society was held on Jan. 30th, Mr. RUSHTON PARKER, the President, being in the chair.

Dr. A. C. WILSON described a case of Gall-stones with Chronic Intestinal Obstruction in which many diagnoses had been given by various physicians in Liverpool and London. Eventually an exploratory operation revealed gall-stones in the gall-bladder and duct, which were removed, also a curious mass in the intestine which was not dealt with.—Mr. R. W. MURRAY described the operation which he had performed in Dr. Wilson's case. He believed the lump in the intestine to be an impacted gall-stone. In order to deal satisfactorily with this, he thought that it would be necessary to short-circuit the gut, and would not advise further operation unless the suffering of the patient became unbearable.—The PRESIDENT, Dr. W. MACFIE CAMPBELL, and Dr. F. A. GILL commented upon the case, and Dr. WILSON replied.

Mr. MURRAY exhibited a boy, aged 13 years, upon whom he had operated for an Artificial Anus in connexion with the small intestine, complicated with considerable prolapse of the gut. Three years previously the boy had been operated upon for intestinal obstruction, a portion of the small intestine, probably about three feet from the ileo-cæcal valve, being brought to the surface and opened. Prolapse of the bowel resulted, and for three years all fæcal matter escaped from this opening in the small intestine. When first seen by Mr. Murray in May last the child's condition was pitiable; he was wasted and anæmic and he carried his prolapsed gut in a bag attached to his waist. In July Mr. Murray opened the abdomen and attached the working end of the small bowel to the transverse colon, end to end. The large gut was much collapsed, and as it had been lying fallow for three years there was some doubt as to whether it would resume its function. The result, however, was very satisfactory, the bowels acting naturally 48 hours after the operation. The general health and comfort of the patient had greatly improved, although there was still a portion of unused bowel prolapsing from the original wound.

Dr. T. R. BRADSHAW read a paper on the Physics of the Mitral Regurgitant Murmur. He said that hitherto no thoroughly satisfactory explanation was forthcoming of the fact that the murmur was heard most plainly at the apex of the left ventricle. He suggested that it was brought about in the following way. The fluid vein in the left auricle set up sonorous vibrations in the still parts of the blood behind the mitral valve. The valve being a thin membrane capable of vibrating transmitted these vibrations to the blood in the ventricle, which conducted them to the apex, the part nearest to the chest wall. He was making experiments with models to ascertain how far this kind of transmission was possible, but so far he had not succeeded in exactly reproducing the conditions artificially as the construction of such a model involved considerable mechanical difficulties.—Dr. J. BARR spoke and Dr. BRADSHAW replied.

Dr. G. G. STOPFORD TAYLOR read a paper on the Treatment of Cancerous Affections of the Skin by means of the X Rays, illustrating his remarks by lantern slides and patients. Case 1.—This was a case of rodent ulcer involving the right side of the nose, the lacrymal canals, and the eyelids in a patient, aged 82 years. Case 2.—This was a case of rodent ulcer on the left cheek, implicating the outer canthus and the eyelids in a patient, aged 64 years. Case 3 was a case of epithelioma on lupus erythematosus affecting the whole surface of the nose in a patient, aged 59 years. Microscopical confirmation of the diagnosis was obtained. Scraping, followed by x-ray applications, was the treatment carried out. Case 4.—This was a case of a large rodent ulcer of the left side of the scalp and pericranium in a patient, aged 78 years. The foregoing cases were of such a nature as to be beyond operative interference or relief by any other known method. The treatment in the first three cases resulted in complete healing of the ulcerated surfaces, with the formation of the most perfect scar tissue and the disappearance of all traces of the disease. In the fourth case, as the pericranium was involved, only partial healing took place, but the wearying pain which usually attended rodent ulceration was much relieved. As a result of the treatment Dr. Taylor arrived at the following conclusions: (1) that the rays were especially indicated in all inoperable cases of cancer of the skin; (2) that the best results were obtained when the disease was confined entirely to the soft parts; (3) that owing to the complete relief of pain and the superior cosmetic result obtained patients too readily assumed that they were well and neglected to attend, and hence recurrence might occur from failure to complete the treatment; and (4) that the use of x rays was no obstacle but a valuable aid to other methods.—Dr. A. N. WALKER thought that the action of x rays on rodent ulcer was not due to their escharotic power, but to some influence which, as it were, turned the scale of growth in favour of the healthy tissues, thereby enabling them to destroy and to absorb the malignant cells. In cases treated by the x rays at the Liverpool Northern Hospital he had noticed that the rolled edge remained in the skin after the ulcer had healed and then gradually disappeared, and in one case in particular of recurrence in which further operation was refused the skin was never broken, but the new growth slowly became absorbed under the influence of the rays.—Dr. A. G. GULLAN congratulated Dr. Taylor on the cases, and noted especially the excellent supple character of the skin and the splendid condition of the scar tissue.—Dr. LESLIE ROBERTS said that the x rays were being used for all sorts of cutaneous diseases. There was a want of precision in these experiments which was perhaps unavoidable owing to their ignorance of the nature of the force with which they were dealing. But they could not doubt that in the end all this promiscuous experimenting would lead to the discovery of some definite principles which would serve to guide the judgment in the selection of cases for treatment. He believed that the effects on the tissues of the skin of the x rays were, broadly speaking, of two orders—(1) those of a kind analogous to *burning;* and (2) *specific* effects. Roentgen rays appeared to exert a specific action in degenerative epithelium. The growth of hair, nails, and the horny cuticle were rapidly affected, and all these were forms of physiological degenerative epithelium. Rodent ulcer was a purely epithelial disease, and there could be no question that the rays caused a dissolution of the new cell growth. The same was true of epithelioma and possibly, to some extent, of other forms of cancer. It was much to be regretted that they did not possess exact information as to the microscopical condition of the scar of rodent ulcer after healing by x rays. The remedial

influence of these rays on lupus he attributed to their burning action. No good effect resulted unless the treatment was accompanied by at least some symptoms of burning. He did not think that the Roentgen rays afforded any marked superiority over the best of the old-fashioned methods of treating lupus. The x rays were in the majority of cases inferior to the arc lamp rays in the treatment of lupus.—The PRESIDENT, Dr. ALEXANDER, and Mr. G. P. NEWBOLT spoke, and Dr. TAYLOR replied.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SURGICAL SECTION.

Synovitis.—Pylorectomy.—Exhibition of Cases.

A MEETING of this section was held on Jan. 17th, Mr. THOMAS MYLES, the President, being in the chair.

Mr. R. L. SWAN read a paper on the Surgical Treatment of Chronic Synovitis. In cases of primary tuberculous synovitis he recommended that the joint should be opened, the fluid evacuated, the synovial membrane irrigated and then thoroughly sterilised with pure carbolic acid, again irrigated with sterilised water, and closed. With proper aseptic precautions he looked on the operation as the best treatment for chronic hydrops articuli of the knee. Rightly carried out the operation placed the synovial membrane in a condition to return to its normal functional activity and the patient recovered a useful limb. He illustrated his paper by the history of two successful cases. He had not found carbolic acid the dangerous bactericide that some said it was. He in no way wished to be understood as advocating the operation for disease of the joint complicated with disease of the osseous tissues or cartilage. The operation was intended to place the synovial membrane of the joint in a condition favourable for its recovery.—The PRESIDENT said that in the majority of cases the pathological lesion consisted in pedunculated growths commencing from the alar ligaments. If on opening the joint, especially in children, he found the synovial membranes to be tuberculous, he recommended that they should be dissected out, a procedure which he believed led to recovery.—Mr. E. H. TAYLOR thought that free swabbing with strong carbolic acid devitalised the synovial membranes and the cartilage and left them a prey to the tubercle bacilli in their vicinity. He looked on the method suggested as one not well calculated to give good results in hydrops articuli; the wound healed, but after a little time the limb became shorter and often flexed. There was not true ankylosis. He recommended that the hyaline cartilage should be shaved off the bone and the raw osseous surfaces joined, ensuring a sound limb.—Mr. JOHNSON said that he had under his care a man with hydrops articuli which was benefited for a time under the treatment by rest, but the swelling did not wholly disappear. He opened the joint, irrigated it, and closed it. The fluid removed—about 18 ounces—was highly albuminous. The synovial membrane contained bacilli in large numbers. The incisions, one on each side of, and parallel to, the patellar tendon, healed quickly and well; but they broke down in a week, and not long afterwards the patient developed tuberculous meningitis from which he died.—Mr. H. G. CROLY, Mr. R. F. TOBIN, Dr. W. S. HAUGHTON, and others also took part in the discussion.

Mr. T. E. GORDON read a paper on a successful case of Pylorectomy. The patient, who was 43 years of age, was admitted to the Adelaide Hospital for an abdominal tumour, and on April 2nd, 1901, Mr. Gordon performed the first step in a ROUX's operation. The patient made a good recovery with little or no shock. 25 days afterwards the second stage of the operation was completed by the removal of the pylorus and about half of the stomach. The intestinal and gastric wounds were sutured with silk, a gauze drain was left in the area of operation, and the wound was closed. The operation occupied one and three-quarter hours. The growth was found to be a columnar-celled cancer. For some days the patient remained in a precarious condition, with a temperature of 102° F. and a pulse of 160. At the end of a week the food was increased in amount and the patient made a good and quick recovery. Mr. Gordon afterwards considered the legitimacy of the operation of pylorectomy, and concluded that in a favourable subject ROUX's operation was called for. — The PRESIDENT congratulated Mr. Gordon on the first successful pylorectomy performed in Dublin. In one of his cases he cut down on the stomach with the intention of performing a pylorectomy, but found so much thickening of the gastric walls with what he and his friends thought was cancer that he returned the stomach unopened to the abdomen, and the woman is to-day, after some years, alive and well.—Mr. SWAN also congratulated Mr. Gordon on his great success.

Mr. CROLY showed a case of Amputation at the Hip-joint and a case of Ligation of the External Iliac Artery for Ilio-femoral Aneurysm.

Mr. TOBIN showed a patient, aged 80 years, from whom the Prostate was removed by Enucleation.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—A meeting of this society was held on Jan. 19th, Mr. A. H. Tubby being in the chair.—Dr. George Carpenter showed a case of Paroxysmal Hæmoglobinuria in a female child, aged three years. An infant sister had been treated at the hospital for congenital syphilis, but the patient showed no signs of that disorder.—Dr. Charles Macalister (Liverpool) suggested that absorption from the nasal discharge, from which the child suffered, might be responsible for the condition.—Dr. G. A. Sutherland called attention to the presence of oxalates in the urine of such cases.—Dr. L. G. Guthrie spoke of two sisters who developed hæmoglobinuria and who were undoubtedly syphilitic.—Dr. Carpenter, in reply, remarked on experiments showing the immediate destructive action of cold on the red blood corpuscles of such cases when topically applied.—Dr. Carpenter read notes of a case of Suprarenal Sarcoma in a boy, aged two and a half years, in which the organs were demonstrated by Dr. D. N. Nabarro who had conducted the necropsy. The right kidney was invaded secondarily by the new growth and the left had become hydronephrotic from pressure on its ureter. The mesenteric and pelvic glands were secondarily invaded and some glands under the sterno-mastoid subsequently. The case in its clinical aspect was not unlike tuberculous peritonitis, but the injection of tuberculin gave negative results and confirmed the original opinion.—Mr. Tubby and Mr. Clement Lucas drew attention to the hopelessness of surgical interference in the large majority of cases of renal sarcoma.—Dr. E. Cautley looked upon it as a case of extra-renal sarcoma, with secondary renal attachment, and inquired as to secondary deposits in the skin.—Dr. Carpenter, in reply, said there were no secondary cutaneous deposits. He did not consider it a case for operation, and that opinion was borne out by the post-mortem examination.—Mr. Clement Lucas showed a case of Traumatic Chorea and Musculo-Spiral Paralysis complicating a fracture of the upper third of the humerus in a girl, aged 11 years. The chorea developed within half an hour of the injury and was not associated with heart disease or a rheumatic history. The musculo-spiral paralysis was believed to be caused by the callus resulting from movement during repair, and it was proposed to cut down on the seat of fracture and relieve the nerve from pressure. Another interesting point in the case was an abnormal growth of hair on the lower third of the arm and dorsal aspect of the forearm corresponding to the skin supplied by the injured nerve.—Dr. Frederick Taylor asked whether a recent attack of any infectious disorder could be negatived and whether it was certain that there were no choreic movements prior to the accident. He referred to the obscurity surrounding the relationship of chorea to the emotions and shock. How did the traumatism operate? Through the central nervous system, the nerve of the limb, or by the production of shock?—Mr. G. Pernet, Mr. F. Jaffrey, and Dr. Carpenter joined in the discussion and Mr. Clement Lucas replied.—Mr. Tubby showed several cases of Paralytic Talipes Calcaneo-valgus, Equino-valgus, and Equino-varus which had been treated by muscle-grafting. In some of the cases, especially those of calcaneo-valgus, the results were good, also in two of the cases of equino-varus. But the cases of equino-valgus were not so striking, although the improvement was very considerable. In his remarks on the operative procedures which had been alluded to Mr. Tubby said that paralytic cases might be divided for purposes of treatment into three classes: (1) those in which a single muscle or a single group of muscles were affected, and these were capable of satisfactory treatment by tenotomy; (2) those in which at least two groups of muscles were paralysed, and these were fit subjects for muscle-grafting; and (3) those severe cases in which all

the muscles around a limb were useless, and for these arthrodesis was recommended. After speaking of the limitations of muscle-grafting and indicating its scope, and pointing out that as there was a diminution of power applicable to a given joint the best results could not be perfect, Mr. Tubby yet thought that muscle-grafting was a scientific and practical procedure, for it distributed what voluntary power was left around an articulation and so it became well-balanced, although too often weak. The indications and methods of operating in arthrodesis were then alluded to and three cases were shown. A case of infantile spastic paralysis affecting the upper extremity was brought forward in which considerable improvement had been obtained by converting the pronator radii teres into a supinator, and by section of the flexor carpi radialis the patient now had the power of voluntary but partial supination of the forearm. The method adopted was fully described in the *British Medical Journal* of Sept. 7th, 1901, and from an experience of six cases Mr. Tubby thought the operation promised well.—Mr. Clement Lucas and Dr. A. E. Sansom spoke of the value of Mr. Tubby's suggestions, and Mr. Tubby replied.—Mr. Walter Edmunds and Dr. Carpenter showed a case of Myositis Ossificans in a female, aged four years, one of a family of eight. The disorder had been noticed six months and recently had rapidly advanced. The affected muscles were in parts infiltrated and in others displayed bony plates. There was fusion of two phalanges of the great toes, a condition which had been recognised as occurring in these cases. Microscopical examination of a portion of an infiltrated muscle showed fibro-nuclear tissue alone.—Dr. W. A. Milligan read notes on a case of Contracted Granular Kidney in a boy, aged seven years. The chief symptoms were pallor, wasting, headache, and polyuria. The heart was slightly hypertrophied, the skin was bronzed, and the urine was of low specific gravity and albuminous. Later the patient developed albuminuric retinitis, and epistaxis and cutaneous hæmorrhages occurred. Four weeks before death the heart began to fail, the extremities became dropsical, giving place to general anasarca with anuria, and the child died comatose. The kidneys, macroscopical and microscopical, were typical of the condition.—Dr. Carpenter inquired as to a history of syphilis in the case and said that he had not yet detected albuminuric retinitis in cases of contracted granular kidney in children; but he had seen that condition in a child, aged eight years, who suffered from a large white kidney which was verified post mortem.—Dr. Sansom regarded it as one of typical interstitial nephritis, but thought that acute parenchymatous nephritis had been grafted on it.—Mr. Sydney Stephenson thought it quite possible that retinitis might be as common in interstitial nephritis in children as it was relatively in that disorder in adults. His own experience had furnished him with two such instances, the latter of them two days since.—Mr. Stephenson read (for Dr. Lewis Marshall of Nottingham) notes on a case of Thyroid Dislocation of the Hip in a child, aged nine years, of four months' duration, confirmed by x rays. There were two points worthy of note: a previous synovitis of the hip-joint had existed and reduction was quite easily effected by manipulation.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 21st, Mr. P. E. Miall being in the chair.—Cases and specimens were shown by Mr. R. Mercer, Dr. H. J. Campbell, Dr. B. H. Slater, and Dr. R. H. Crowley.—Dr. Nicholson Dobie read notes on a case of Distension and Hernia of the Gall-bladder. The patient was a woman, aged 60 years, who for two years had complained of pain in the umbilical region when she was moving about. There was no pain when she was at rest in bed. For about 12 months she had noticed a lump in the body. There was no history of jaundice. Examination of the abdomen showed a large ventral hernia in the middle line below the umbilicus. The hernia was reducible easily and it contained a tumour which when returned to the abdominal cavity could be moved about freely. The tumour was tense and fluctuating and was of about the size of a fœtal head at full term. On the right side of the tumour was a hard projection one and a half inches long and of the size of three fingers. On Dec. 4th, 1901, the abdomen was opened in the middle line below the umbilicus. The tumour was found to be a greatly distended gall-bladder with thickened and congested walls. There was no adhesion. In a pouch on the right side was a large gall-stone cylindrical in shape and weighing eight and a half drachms. The gall-bladder was opened, the stone was removed, and the gall-bladder was then stitched to the upper end of the abdominal incision and the rest of the wound closed. The wound healed by first intention except for the biliary fistula. On Dec. 27th the patient had an attack of right hemiplegia with complete loss of speech.—Mr. Mercer read the notes on a case of Pyloric Obstruction—Gastro-jejunostomy. The patient was a woman, aged 45 years. In March, 1899, oöphorectomy had been performed for dysmenorrhœa and ovarian neuralgia. In September, 1899, symptoms of gastric disturbance began with pain and vomiting. Blood was present in the vomit on one occasion. Notwithstanding treatment by rest in bed, dieting, and gastric lavage, relief was never more than temporary, and as she was becoming more and more emaciated and weak operative measures were advised. She was admitted to a hospital and the abdomen was opened in January, 1901. A band was found stretching from the greater curvature of the stomach near the pylorus to the scar of the previous operation. This was divided and in addition the pylorus was stretched by the fingers, the stomach wall being invaginated into it. For three months the patient did well but then the old symptoms began to return, and by August she had fallen back to much the same condition as before and appeared to be dying slowly from starvation. At the patient's request a further operation was undertaken by Mr. Mercer at home in October, 1901. On opening the abdominal cavity the transverse colon was found to be adherent to the scar and the intestines were matted together; after some difficulty the jejunum was brought up into the wound and united to the posterior portion of the stomach. The pylorus was embedded in a mass of adherent intestines and was not seen. The shock after the operation was not severe, but there was very persistent vomiting which was stercoraceous on the morning of the third day. The stomach was washed out with permanganate of potash solution and a turpentine enema administered. The vomiting now ceased and the patient was able to take nourishment. A month after the operation she was taking solid food and was rapidly regaining her strength and weight. She did well for a time, but recently (January, 1902) the old symptoms of pain and vomiting had returned.—Dr. C. F. M. Althorp read notes on three cases of New Growth in the Large Intestine.—Mr. J. Basil Hall read a paper entitled "Some Observations on Dilatation of the Stomach and a Modification of Posterior Gastro-jejunostomy," illustrated by five cases.

CLINICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on Jan. 21st, Dr. A. Wahltuch being in the chair.—Mr. J. Howson Ray related a case of Strangulated Femoral Hernia occurring in a man, aged 53 years, where the sac was found to contain about three drachms of foul-smelling pus and a gangrenous loop of small intestine which had already given way. The symptoms were masked by alcoholic mania. The patient was sent into the Salford Royal Hospital by Mr. J. Cantley of Higher Broughton, and was operated upon by Mr. Ray about half an hour after admission. The gangrenous bowel—about three and a half inches long—was excised and the ends of the gut were united by continuous catgut sutures, including all the coats of the intestine, whilst Lembert's sutures of fine silk were used in two layers outside. No button or bobbin was employed. The sac was removed and a gauze drain was left for a few days with a small-sized drainage-tube just entering the peritoneum. Feeding was entirely per rectum for the first week. On the eighth day there was some fæcal matter noticed about the wound and for a week longer fæces discharged at the groin as well as per rectum. In the course of the fifth week the wound had entirely healed and the patient's mind was practically clear. He left the hospital quite well eight weeks after admission. The patient was shown to the meeting, as also the specimen removed.—Mr. J. E. Platt gave a demonstration on Diseases of the Tongue and showed cases of smoker's patches, leukoplakia, atrophy of papillæ, erythema migrans, lichen planus, secondary and tertiary syphilitic affections, tuberculous ulcer, dental ulcer, nævoid papilloma, and epithelioma. He advocated the use of ointments with a basis of vaseline and lanolin, as recommended by Mr. H. T. Butlin, for the treatment of certain affections of the tongue, several of the cases having derived great benefit from their application.

MIDLAND MEDICAL SOCIETY.—A meeting of this society was held on Jan. 22nd, Mr. Arthur Oakes, the President, being in the chair.—Mr. W. F. Haslam showed

a woman, aged 37 years, the subject of Diffuse Symmetrical Scleroderma. It affected the skin of the face, neck, thorax, and to a less extent the upper extremities. It came on about six months ago and reached its maximum intensity in five months, since which time it had improved.—Mr. F. Marsh showed a case of Carcinoma of the Sigmoid Flexure in a boy, aged 15 years, who was admitted into the Queen's Hospital, Birmingham, on June 26th, 1901, for pain in the epigastrium and passing of blood with the fæces. The passing of blood began six months prior to his admission. The pain, which was intermittent and referred to the epigastrium, only commenced a month before. Per rectum an indistinct fulness could be felt to the left in the recto-vesical pouch. Blood and mucus followed the withdrawal of the finger. On July 5th a median incision was made and a growth was found in the lower three inches of the sigmoid. The growth was excised with a margin of healthy bowel, some enlarged mesenteric glands were removed, and with considerable difficulty the two ends of the intestine, the middle of the sigmoid, and the upper end of the rectum were joined as accurately as the position of the parts would allow with Lembert sutures. A good recovery was made, the bowels acted regularly without difficulty, and the boy went home well on August 7th. Microscopical examination showed that the growth was a columnar carcinoma. The subsequent history, however, pointed to recurrence, as the brother of the boy reported some four months after the operation that there was a return of blood in the fæces, but Mr. Marsh had not had an opportunity of examining him.—Mr. Christopher Martin showed a Kidney removed on Feb. 11th for Calculous Pyonephrosis from a woman, aged 40 years. The patient bore the operation well and made an uninterrupted recovery.—Mr. J. F. Hall-Edwards read a paper, illustrated by lantern slides, on Experiences with the Imperial Yeomanry Hospital in South Africa.

Reviews and Notices of Books.

The Healing of Nerves. By CHARLES A. BALLANCE, M.S. Lond., F.R.C.S. Eng., Assistant Surgeon to St. Thomas's Hospital; and PURVES STEWART, M.A., M.D. Edin., Assistant Physician to the Westminster Hospital. Illustrated by 16 Plates and one Figure in the Text. London: Macmillan and Co., Limited. 1902. 4to, pp. 112. Price 12*s.* 6*d.*

IN the preface to this treatise the authors state that most of the work was completed by the end of 1899, but the absence of Mr. Ballance at the South African war for more than a year has delayed its publication until the present date. The subject of the volume is one of great interest and has attracted the attention of many observers. The experiments required are not difficult to perform, and they can be practised whilst the animal is under chloroform; but the subsequent microscopical investigation demands a thorough knowledge of the modern methods of staining and mounting, and Mr. Ballance has been fortunate, as he himself points out, in obtaining the assistance of so able a coadjutor as Dr. J. Purves Stewart. The animals on which experiments were made were monkeys, dogs, and cats, and the points which the authors proposed to investigate were the following:—the process of degeneration in a peripheral nerve after injury both without and with immediate suture of the two ends; the process of regeneration in a divided nerve-trunk which has been divided and reunited by suture; the process of regeneration, if any, in the distal segment of a divided nerve, the cut ends of which have not been reunited by suture; and lastly, the changes which occur in nerve grafts. The literature of the regeneration of nerves after injury and a good historical *résumé* and bibliography will be found appended to an article published in 1892 by Professor W. H. Howell and Dr. G. C. Huber, in the *Journal of Physiology*, and to articles by Galeotti and Levi in "Ziegler's Beiträge" for 1895 and by Dr. Kennedy in the "Philosophical Transactions" for 1897. On the strength of statements made by Dr. Waller, Professor Ranvier, Professor Kölliker, and Professor His, it has been generally accepted that after division of a nerve new axis cylinders are developed in the form of outgrowths from the axis cylinders in the central segment which, inclosing the medullary sheaths of the distal segment, replace the old axis cylinders which have undergone degeneration. Another view, however, has been advanced which the authors term the "peripheral" theory and to which they give their entire adhesion. According to this the peripheral segments of the cut fibres undergo complete degeneration whilst new fibres in the distal segment—axis cylinders, medullary sheaths, and neurilemmata alike—are formed from pre-existing cells in the distal segment itself, and after their formation become attached to those of the central segment, thereby restoring the conductivity of the nerve-fibre. A small portion of the proximal segments of the cut fibres undergoes degeneration, but this process does not extend to any considerable distance up the nerves towards the cells which form their trophic centres. The successive changes that take place in the process of degeneration have been very carefully worked out by the authors and constitute an interesting history. Within six hours after the initial blood extravasation consequent on the cut an invasion of leucocytes takes place, reaching its maximum about the eighteenth hour. After three days the leucocytes are gradually and largely replaced by connective-tissue cells. These begin to proliferate and on the fourth day indent the fatty substance of the myelin sheaths and then absorb both sheaths and axis cylinders, the whole process occupying several weeks. In the meanwhile, commencing about the second day, the neurilemma cells proliferate, the young cells sending forth fine protoplasmic processes from their extremities in the direction of the original nerve. The smaller nerves resist the degenerative process longer than the larger ones. In the process of regeneration the proximal extremity of the cut nerves exhibits at a very early period—that is to say, within 24 hours—a primitive end-bulb, produced by the curling up of the loose ends of the divided fibres. This acts as a scaffold on which the permanent end-bulb is deposited. The earliest signs of regeneration in the distal segments of the cut nerves occur at the end of three weeks; numerous longitudinal "spider cells" appear in the distal segment and in the intermediate scar tissue which shoot out young beaded axis cyclinders from their opposite poles. These are new axons which overlap and coalesce with one another. New medullary sheaths then appear inclosing the axons about the fourth week, and gradually the regeneration becomes complete and the cut nerve functionally active. The regeneration of a cut nerve is not therefore affected by the growth of the proximal extremities of the axis cylinders, but is accomplished by the development from longitudinal chains of cells of axons which fuse together and become inclosed in medullary sheaths. The treatise, though short, is well deserving of attentive study.

Text-book of Pharmacology and Therapeutics. Edited by W. HALE WHITE, M.D., F.R.C.P. Lond., Physician to, and Lecturer on Medicine at, Guy's Hospital, London. London and Edinburgh: Young J. Pentland. 1901. Pp. viii.–1040.

THE title of this work accurately describes what manner of book it is and implies what it is not. Here we find no pharmacopœia or materia medica and no description of universal, but only of medical, therapeutics—no book for students preparing for examination, but a standard work of reference for the library of the practitioner. Handicapped as pharmacy in England still is by reason of the lack of a universal system of weights and measures, it has been found necessary to use the English system for clinical descriptions and directions while the laboratory details are given in the decimal system.

The authors of the various chapters and sections are 29 in number, and include professors of the University of Michigan and teachers at the colleges of Philadelphia, in addition to members of the staffs of most of the London general hospitals. The classification of the drugs leaves much to be desired from the point of view of the reader who intends steadily to read through the work, but for reference purposes the index to a great extent makes up for shortcomings. For the most part the medicines are grouped according to "their pharmacological affinities, but in some instances the arrangement depends upon the convenience of keeping together several minor drugs described by the same author." The administration of anæsthetics is thoroughly dealt with by Mr. G. Rowell of Guy's Hospital, while the Pharmacology of Chloroform itself is the subject of one of the articles by Dr. J. Rose Bradford and Dr. Leonard Hill, F.R.S. Dr. R. Stockman of Glasgow University deals with opium and quotes Sir George Birdwood on the "opium habit," besides giving a *résumé* of the views of the gentlemen who sat on the Royal Commission on Opium-taking. The important and interesting section on Organo-therapy has been intrusted to Dr. H. W. G. Mackenzie of St. Thomas's Hospital, while the articles on Serum-therapy are from the pen of Dr. J. W. Washbourn of Guy's Hospital. The chapters devoted to Diet occupy 25 pages and contain the views of Dr. Sidney H. C. Martin, F.R.S. There is an excellent and very readable article on the Effects of Rest, Exercise, and Baths on Cases of Chronic Heart Disease. This section will be found of the greatest use to general practitioners, containing as it does a discussion about the Nauheim method of treating the disease.

As the diseases which are giving rise to most investigation, experiment, and discussion at the present day are those due to tuberculous infection, we naturally turn to a book like this to find the fullest and latest authoritative views about the open-air treatment of pulmonary tuberculosis. There is a section devoted to this subject, it is true, but only the main features of the system are dealt with, and those all too briefly. We are of opinion that this article should have been written by a physician who has had many years of practical experience of the system, and that there ought to be more "physiological light" thrown on the *rationale* of the method. "Undoubtedly a great deal of dyspepsia is promoted by an undue quantity of liquid food, and appetite for solid food is proportionately diminished." Theoretically this may be true enough, but the reader who is referring to this subject in this book should read also the views of medical men who have themselves been sufferers from the disease and have recovered. Such practitioners have seen many cases actually undergoing treatment in addition to the knowledge and experience gained *in propriâ personâ*. It is true that the subject is a large one, and will attain considerable proportions in the future. If a medical man in a large practice wishes for up-to-date practical information and advice about the open-air treatment of pulmonary tuberculosis he will do well to look elsewhere for it than in this otherwise excellent work.

Human Physiology, prepared with special reference to Students of Medicine. By JOSEPH HOWARD RAYMOND, A.M., M.D., Professor of Physiology and Hygiene in the Long Island College Hospital. Second edition, with 443 Illustrations, some of which are coloured, and Four Full-page Lithographic Plates. London and Philadelphia: W. B. Saunders and Co. 1901. 8vo. Pp. 668. Price 15*s.* net.

THE domain of physiology is of such wide extent and is so rapidly enlarging that it is not difficult for an author who undertakes to write a treatise upon it to present the more important facts in a novel way and to expatiate upon others that are usually passed over with brevity. At the same time, in any work that proposes to give a *résumé* of physiology in the compass of 600 or 700 pages a large portion of it can only represent facts that are generally accepted and are contained in most of its predecessors. It is convenient, no doubt, for a professor to publish a book devoted to the subject on which he lectures. It brings to a focus his own knowledge, and it enables his class to read up the lecture of the day, and so fulfils its purpose; but as nearly every college professor has written a book of the same kind Professor Raymond can hardly expect that his "Human Physiology" will displace the works of Halliburton, Hall, Howell, Waller, Starling, or Foster on the subject. Still, it is a very creditable performance, and whilst the men attending his lectures will doubtless study it attentively it may well be read with care by those who are in view of any examination on physiology or who wish to get a new reading of familiar physiological facts.

Professor Raymond divides his book into five parts: Histology; Physiological Chemistry; the Nutritive Functions; the Nervous Functions; and the Reproductive Functions. The chapter on Histology is briefly but well given, and the illustrations are excellent. He accepts Schäfer's views of the structure of muscle, but makes no mention of the peculiarities of the smaller vessels. The chapter on Physiological Chemistry contains the facts usually given under this heading and passes by an easy transition into the consideration of Food, under which heading some interesting facts are given. Thus, speaking of sugar, the author quotes a bulletin issued by the United States Department of Agriculture and written by Mary H. Abel. It appears from this that between 7,000,000 and 8,000,000 tons of cane sugar are used annually in the different countries of the world, England consuming in 1895 86 pounds per head; the United States, 64 pounds; and Italy, Greece, and Turkey less than 7 pounds. By a slip of the pen, it is stated that two-thirds of the *cane* sugar now used are derived from the sugar *beet*. We suppose "crystallised" should be substituted for "cane." It is remarkable that the sugar beet of 1806 contained only 6 per cent. of sugar, whilst that of to-day contains 15 per cent. Miss Abel thinks that the Americans use too much sugar in their cuisine, or rather that they use it with too many kinds of food. The daily quantity of sugar that should not be much exceeded is from four to five ounces. Speaking of vegetarian diets he draws attention to a quotation from Gubler made by Dr. Alanus, himself a vegetarian, that vegetable food, being richer in mineral salts than that of animal origin, introduces more of these salts into the blood as a result of which there is a tendency to an atheromatous condition of the arteries. This belief is borne out by the frequency of atheromatous degeneration of the arteries in the rice-eating natives of Bombay and Calcutta. Hence, purely vegetable diet does not appear to be the normal food of man. The rations of soldiers in the United States army and those of the men in the English and German armies are given and are instructively compared. The section on Alcohol is worthy of perusal, as it gives the results of Professor Atwater's experiments, in which two and one-half ounces of pure alcohol were given in divided doses. This quantity is equal to that contained in about three glasses of whisky or in a bottle of claret. The experiments showed that whilst about two parts per cent. were discharged by the several emunctories of the body the rest was consumed or oxidised like any other food and was not different in this respect from fat, starch, or sugar.

The section on the Movements of the Stomach, which in most works on physiology is merely an echo of the observations of Dr. Beaumont on Alexis St. Martin, are diversified here by an account of these movements as observed by Dr. Cannon who experimented upon a cat to which subnitrate of bismuth had been administered. This salt renders the stomach opaque to the Roentgen rays and Dr. Cannon

was thus able to trace the gastric movements with great precision. The curious constrictions that occur and the march of the peristaltic waves are very distinctly shown, and they serve to modify the views generally accepted on the authority of Dr. Beaumont and Dr. Brinton. Two remarkable cases of ablation of the whole stomach, with preservation of life for a considerable period, are recorded. The whole chapter on Digestion, without containing much that is novel, gives a good *résumé* of our present knowledge of that function. The chapter on Voice and Speech, with the illustrative photographs of the larynx, chiefly giving Professor French's views, is highly instructive.

The section on the Circulation is the least satisfactory one in the book. We are unable to find any account of the nerves distributed to the heart except a few lines under the heads of the Medulla Oblongata and Spinal Cord. It is true that our knowledge of the relations of the nervous system to the heart is still very imperfect, and that much of what is known admits of more than one explanation, but this hardly justifies its almost entire omission in such a treatise as this. Again, Professor Raymond can hardly have seen Stephen Hale's "Statical Essays" or he would not have named him "Stephen Hall." His "classic experiment" was originally performed in 1702, and not in 1727, and he did not introduce a goose-quill into the femoral artery of a horse, but, as he says very explicitly, "a *brass* pipe whose bore was one-sixth of an inch in diameter, and to that, by means of another brass pipe which was fitly adapted to it," he fixed "a glass tube of nearly the same diameter, which was nine feet in length." Here and there we have noticed a few slips of the pen—as, for example, that noted above, and "Halle," on p. 357, which is a misprint for *Haller*. The explanation which Professor Raymond gives of the fact that the moon seems larger to an observer when near the horizon than when near the zenith is not satisfactory. "Near the horizon," he says, "we have terrestrial objects to compare it with, while when in the zenith there is nothing with which to compare it." But it may be said that the moon looks large when rising on Salisbury Plain, on which there is no conspicuous terrestrial object with which it can be compared, and looks small at its zenith when close to the vane of the spire of Salisbury Cathedral, the size and distance of which are well known. It is probably an affair of refraction. The book is well got up and well printed, and may be regarded as a trustworthy guide for the student and a useful work of reference for the general practitioner. The illustrations are numerous and are well executed.

The Sanitary Inspector's Handbook. By ALBERT TAYLOR, Member of the Sanitary Institute; Holder of the Inspector of Nuisances Certificate of the Sanitary Institute; Demonstrator to the Students of the Sanitary Institute; Sanitary Inspector to the City of Westminster; late Chief Sanitary Inspector to the Vestry of St. George, Hanover-square, London; formerly Chief Inspector of Nuisances, Wigan; and Sanitary Inspector of Wallasey. Third edition. London: H. K. Lewis. 1901. Pp. 408. Price 6*s.*

THIS book is intended chiefly for the use of students preparing for the various examinations in sanitary subjects which are held to test the knowledge of those who wish to become sanitary inspectors in England and Scotland. The qualifications of the author to write on the subject are fully given on the title-page and are duly quoted above and the fact that the book has already passed through two editions proves that the work has been appreciated.

The amount of information which a well-qualified sanitary inspector must possess on a great variety of subjects appears at first sight to be almost appalling. He should have a general knowledge of the provisions of the Public Health Acts and a practical knowledge of what constitutes a nuisance from a legal point of view, and should understand clearly the exact procedure to be adopted in serving the statutory notices before taking the legal proceedings which are occasionally necessary. Order, method, and accuracy are essential for the due performance of his duties, and without the exercise of these qualities his official books and diary would be worse than useless. A practical knowledge of drainage and of water-closets is essential, and the testing of drains is an important part of his daily work. He will do well to possess a general knowledge of the problems connected with water-supply and of the laws which bear upon it, and it is essential that he shall be able to collect a sample of water *secundum artem* for the use of an analyst. While a knowledge of infectious disease is advantageous a practical knowledge of the methods of disinfection is necessary. A sanitary inspector should also understand the theory of ventilation and be capable of making accurate measurements of cubic spaces. It is not likely that he will have to deal frequently with undecagons and duodecagons, but he will find in Mr. Taylor's book (at page 250) information as to how he should proceed in such circumstances and a table bearing on the subject having figures which extend to seven decimal places. An ideal sanitary inspector should understand the law on meat inspection and the by-laws and regulations which are in force regarding it, and should have a knowledge of the normal appearance and of the various morbid appearances presented by the organs of all the animals which are used as food by man. Slaughter-houses come under his supervision, lodging-houses give him trouble, and his duties in regard to canal-boats are not always easy of execution. The supervision of the sanitation of factories and workshops falls under his care, and his duties in connexion with dairies, cowsheds, and milkshops are by no means light. The due execution of the provisions of the Sale of Food and Drugs and Margarine Acts is an onerous responsibility, especially as the sanitary inspector has no fixity of tenure and his appointment is often made by gentlemen interested in the sale of food. Mr. Taylor's book deals with all the questions mentioned. It should prove useful, not only to those who are, or who wish to become, sanitary inspectors but also to the laymen whose duties as members of municipal bodies necessitate a general knowledge on those sanitary matters over which they exercise authority.

The book on the whole is a good one, but there are a few little things which might with advantage be altered in the next edition. There is no necessity (page 187) to perpetuate the unsavoury opinion of the River Pollution Commissioners that "river water to which sewage gains access" is "palatable." Mr. Taylor is also very lax as to his views on the smoke nuisance—a matter with which it may be hoped that the civic authorities of Westminster will deal The book contains one quotation from the work of a metropolitan officer of health which is rather curious. It relates to the evils of overcrowding. Everyone is familiar with the ill-effects of intemperance and other sinful courses as described by sensational writers, but even with these, as a rule, "death ends the scene." This does not appear to be the case in the matter of overcrowding. The ill-effects produced are "pulmonary tuberculosis, continued fever, generally impaired health, a putrid condition of the body, followed by death, mania, boils," and so on. The idea of having boils after death adds a new terror to overcrowding.

LIBRARY TABLE.

Diseases of the Nose and Throat. By J. PRICE-BROWN, M.D., L.R.C.P. Edin., Laryngologist to the Toronto Western Hospital and to the Protestant Orphans' Home. With 159 Engravings and six Coloured Plates. London: Henry Kimpton. 1901. Pp 471. Price 7*s.* 6*d.*—This is the first

Canadian text-book on Diseases of the Nose and Throat, and as such deserves a welcome apart from the merit which it possesses. Dr. Price-Brown tells us that he has been stimulated to publish his work on account of the indifferent knowledge possessed by the profession at large of diseased conditions peculiar to the nose and throat. He says that the book is intended for the use of general practitioners, and that the anatomy of the parts is only touched upon sufficiently to enable the readers to treat such diseases as they meet with in practice. He wisely omits diphtheria from the book as being thoroughly dealt with in works on general medicine. The subject matter is very clearly rendered, and much thought and space have been devoted to treatment, each disease not only having its most approved and useful medicinal remedies enumerated, but carefully selected prescriptions are added, both Dr. Price-Brown's and those of other well-known authorities, though, in common with most transatlantic specialists, oily sprays and nebulæ are more advocated than is the custom here. In discussing the etiology of hypertrophic rhinitis the author suggests that the habit of always putting a child to sleep upon the same side has an influence or tendency to cause this condition. We are doubtful as to the correctness of this observation, especially as deviations of the septum are more commonly towards the left and the side on which most people sleep is the right, and if nasal respiration was conducted in nasally healthy people only through the upper nostril the septum should more often bulge towards the right side. Total removal of the inferior turbinate is condemned in Canada on account of the dry climate. In atrophic rhinitis and naso-pharyngitis the regular use of a post-nasal syringe or spray, in addition to nasal irrigation, is strongly recommended, and Dr. Price-Brown is also in favour of vibratory massage, using a probe covered with cotton-wool soaked in albolene. He believes that there is ample evidence to show that fibrinous rhinitis is a disease distinct from nasal diphtheria and he differentiates between œdematous and vaso-motor rhinitis, which seems to be a purely arbitrary separation. We consider that evidence in favour of the separation is indifferent, and we strongly deprecate the home use of solutions of cocaine, which he advocates, as being liable to set up the cocaine habit. The removal of adenoids is not recommended by the author unless the growth is large; for the smaller hypertrophies an alcoholic spray is advised—a form of treatment that appears to be worthy of trial. Dr. Price-Brown's book is one which will be of special value to those in general practice. It is written by one who has had a long experience of general practice with a full knowledge of the special subjects treated of, and we believe it will prove a useful book of reference to busy practitioners. The illustrations, with the exception of some good coloured photographs of sections of the head, are chiefly reproduced from other works.

Elementary Practical Hygiene. Section I. By WILLIAM S. FURNEAUX. London, New York, and Bombay: Longmans, Green, and Co. 1901. Pp. 239. 8vo. Illustrated. Price 2*s.* 6*d.*—The grand importance of making the education of the young a preliminary and foundation of their later education is now beginning to be realised in England. People object to more "science" in schools because children are already taught far more than they can truly assimilate and "cramming" has to be resorted to. This is because both parents and ordinary school teachers have so little knowledge of what "science" really is. If they knew what science is they would not sanction for an instant the system of education that so largely prevails among us. With every desire to do justice to the efforts of those who are responsible for the carrying-out of school routine, what better can we say of our expensive educations for the young than that when our boys and girls leave school they have nothing but a mere smattering of a large number of different subjects? To what but widespread ignorance of hygiene and domestic science can we refer the fact that here is a nation with a splendid past, a glorious future before it, and yet a nation with scarcely a healthy family in it? We medical men can vouch for the truth of this statement of universal poor health. A nation, then, that cannot keep itself in good moral and physical health needs knowledge of some sort very badly. And if this is not applied domestic science—the principles of hygiene—what is it? Such a book as that of Mr. W. S. Furneaux is one of those which are beginning to be appreciated as harbingers of the healthier times to which we may surely look forward. The book is interesting, well illustrated, well written, and to be understood of all who are to any extent intelligent. The experiments are all simple and need no expensive apparatus. "Science," people must be taught, is not dry, but interesting, not abstruse, but simple. The book is a really valuable one, and the attention of all schoolmasters, governesses, and parents should be directed to it.

Index for Surgical Records. By CHARLES W. CATHCART, F.R.C.S. Eng. and Edin., Surgeon to the Royal Infirmary, Edinburgh. Edinburgh: A. & D. Padon.—We have received from Messrs. A. & D. Padon, of 13, St. Andrew-square, Edinburgh, a specimen of their "Index of Surgical Records," which is an attempt to apply the card system, so much in vogue now in dealing with business documents, to the arrangement of notes of surgical and medical cases. One objection undoubtedly to clinical note-taking is that the recorded observations of the students are seldom of any personal use to them afterwards. Mr. Cathcart would provide the student with an indexing portfolio with 32 pockets, each of which is arranged for the reception of notes concerning a different organ or physiological tissue, pocket 8, for example, being for the eye; pocket 17 for the peritoneum, mesentery, and omentum; and pocket 31 being for the lungs and pleura. A scheme of classification is provided whereby the notes could be best arranged within their separate pockets. Undoubtedly the idea is a good one, and one that might appeal with force to an orderly and ambitious student. With a properly kept portfolio he would be able in a moment to put his hand on the record of all his past experiences.

The Pocket Gray. By the late EDWARD COTTERELL, F.R.C.S. Fifth edition, revised by C. H. FAGGE, M.B., M.S. Lond., F.R.C.S. Eng., Senior Demonstrator of Anatomy, Guy's Hospital. London: Baillière, Tindall, and Cox. 1901. Pp. 269, small 8vo. Price 3*s.* 6*d.* net.—The usefulness of this volume in its former editions was not a little impaired by its doubtful accuracy in matters of small detail. Candidates for the Fellowship of the Royal Colleges of Surgeons need to know their minute anatomy very well, and stand in urgent need of a small book which should contain all details without unessential verbiage, yet be thoroughly trustworthy and accurate. Mr. Fagge has set to work to supply students with such a little book, which is still within the limits of a pocket volume and yet will be found to contain all the anatomical knowledge necessary for examination purposes in a concise and categorical form. Here and there in this fifth edition are amplifications of the descriptions of viscera and investing membranes. There is only one actually new departure in this edition and that is a most welcome one—the addition of the action of each individual muscle to its anatomical description. Always held high in the estimation of students, the "Pocket Gray" will soon be considered indispensable, and for those who have completed their dissections there will be no more popular way of refreshing the memory for details than by studying this little book. The additions and alterations that have been made have not added appreciably to its bulk, and for the few important details that

even now have been omitted the student must refer to the larger text-books.

Pocket Formulary for the Treatment of Disease in Children. By LUDWIG FREYBERGER, M.D. Vienna, M.R.C.P. Lond., Physician to the St. Pancras and Northern Dispensary; late Clinical Assistant, Hospital for Sick Children, Great Ormond-street. Third edition. London: Rebman, Limited. 1901. Pp. 260. Price 7*s.* 6*d.*—The second edition of this useful and well-arranged little volume was favourably reviewed in THE LANCET of Sept. 29th, 1900. p. 948, and we are glad to see that the demand for it has justified the bringing-out of a third edition in a slightly enlarged form. The drugs described are for the most part those of the British Pharmacopœia, but some serviceable additions have been taken from the Pharmacopœia of the British Pharmaceutical Conference, the United States Pharmacopœia, and a few of the continental ones. The arrangement of the drugs being alphabetical is convenient for reference; under each of them the uses, therapeutics, and doses at different ages are given, together with suggestions for flavouring and complete prescriptions, two or more in number. In the appendix there are other alphabetical indexes in which drugs are classified according to their properties—e.g., alterantia, anæsthetica, antacida, &c., and diseases are similarly arranged from Acne to Zymotic Diarrhœa (Cholera infantum). Dr. Freyberger has succeeded in compressing much information into a moderate compass.

"Who's Who" for 1902. London: Adam and Charles Black. Pp. 1424. Price 5*s.*—"Who's Who" is certainly one of the most useful books of reference that we possess. There are but few changes in the plan of the issue for this year as compared with that for last year, except that the list of those who have received the Victoria Cross, which appeared last year in an incomplete form, has this year been omitted altogether. So have the articles on the Church of England and that on the Church of Rome. Altogether, Part I. has been cut down by 20 pages, and yet the whole book this year consists of 1424 pages, as against 1234 last year. The increase, therefore, must be in the biographies, some of which might very well be cut down. But as a whole the publication is most useful and one to which we constantly have occasion to refer.

Whitaker's Peerage, 1902. London: J. Whitaker and Sons, Limited. 1902. Pp. 647. Price 2*s* 6*d.*—Whitaker is always modest. His book is not only a peerage, but a baronetage, a knightage, a list of Companions of Orders and of bishops, both spiritual peers and others. The Lords of Session are also given. The printing, paper, and binding of the book are unexceptionable and the amount of information contained is marvellous. Especially useful are the accounts of branches of the family of a present holder of a title. Altogether an admirable book.

The Local Government Annual and Official Directory, 1902. Edited by S. EDGECUMBE ROGERS. London: The *Local Government Journal* Office. Price 1*s.* 6*d.*—This book claims to be "the most complete Local Government Directory." It may be so, but the text is so sandwiched with advertisements that it is the most irritating book of reference which we have ever come across. Such an arrangement of advertisements in a book of reference is unpardonable, and we advise Mr. Rogers to see that in his next edition the advertisements are relegated to their proper place—namely, before and after the text of the book.

Herbert Fry's Royal Guide to the London Charities. Edited by JOHN LANE. London: Chatto and Windus. 1902. Pp. 293. Price 1*s.* 6*d.*—This little book has reached its thirty-eighth annual issue. We have nothing new to say about it. It will serve a most useful purpose, first as a book of reference for the poor, who are anxious to obtain relief, by telling them where to go; and secondly, for the charitable, by giving them details of various institutions to which their money may profitably be given. The book still contains information about a number of controversial "religious" societies which by no stretch of language can be called "charities." These societies, we notice, do not make any return of "persons benefited," but we cannot think that they should be in a book of this kind at all.

Looking Back.

FROM

THE LANCET, *SUNDAY, FEB.* 8, 1824.

WE are perfectly aware that in the history of JONES'S case,[1] which we communicated to the public, there are two defects.—First; the slight account of the man's state previous to the operation, which was owing to the very short notice that was given of it, thereby preventing us from obtaining those particulars which we otherwise should have acquired.—Secondly; what is so properly complained of by our correspondent viz.—the omission of the appearances of the removed limb. This arose from the bone not having been exhibited, a circumstance which we exceedingly regret. No operator should ever omit, in justice to those who are present, and to his own character as a surgeon, to exhibit the parts which are removed, in order that all may see the reasons for which the operation was performed.—In consequence of Sir ASTLEY COOPER having omitted to do this, an impression exists in the minds of some, that he was not justified in the course he adopted, of removing the limb from the joint. Had the appearances of the bone been shown to the students, the profession would then have had sufficient *data* for judging of the propriety or impropriety of the operation, and the present impression would most probably never have existed.

From the number of operations performed at the Borough hospitals, some persons think that the knife is occasionally resorted to in cases where it might be dispensed with. In answer to this, we would only state at present, that the size of these institutions should be borne in mind; and the celebrity which the surgeons belonging to these institutions, have obtained for their skill in the use of the knife. We must confess, however, that a great rage for operations exists at the Borough; the pupils are extremely anxious to see them performed, and the surgeons appear equally anxious to obtain a reputation by performing them. The surgeons and students of surgery, however, should remember that there is something else besides the mere mode of operating—that there is another important point connected with operative surgery—the time when operations should be performed. To know how to operate well, a man must possess some manual dexterity, and an acquaintance with anatomy; different operations requiring these qualities in a different degree. To know when operations ought to be performed, and when they ought not, requires more extensive attainments, and can only be learnt by those who investigate disease, and watch its effects with a degree of attention which few seems disposed to bestow. The principles of medicine must be thoroughly understood. An acquaintance with various remedies, diet and temperature, on various complaints, must also be possessed—knowledge which can only be attained by the most laborious study and diligent observation.—To remove a limb, or to come to see it removed, demand little exertion on the part either of the surgeon or student, compared with a patient examination into the nature of the disease, for which the operation is to be performed; and of the chances of amelioration a patient may possess, from the trial of different means on the complaint under which he labours. There are some cases in which there cannot exist a doubt as to the propriety of operating; where, on the prompt skill of a surgeon, the life of a patient depends. We do not wish to discourage the performance of operations, when they are necessary; but we make these remarks on account of the misdirection which the minds of the students appear to receive from looking only at the manner in which the operator uses the knife, without ever enquiring into the reasons for which the operation is performed.

[1] Vide account of Amputation at the Hip Joint under the heading "Looking Back" in THE LANCET, Jan. 18th, 1902, p. 172. The above editorial observations were educed by a letter from a correspondent.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 8, 1902.

The Metropolitan Water-supply.

ON Jan. 31st Mr. LONG, the President of the Local Government Board, introduced into Parliament the Government "Bill for establishing a Water Board to manage the supply of water within London and certain adjoining districts, for transferring to the Water Board the undertakings of the metropolitan water companies, and for other purposes connected therewith." An abstract of this Bill will be found on page 392. In the course of a very able speech Mr. LONG emphasised a point on which we have frequently had to insist—the fact that the question of the water-supply of London has no relation to party politics. "There is a general and widespread desire," said the President of the Local Government Board, "that some reasonable scheme should be produced which will remove this question of the administration of the London water-supply from the region of political controversy." Fortunately for the Government Mr. LONG has been impressed with the difficulties of the subject with which it has been his fate to deal and his speech shows that he has bestowed time and thought upon the matter. We can only give within the limits of this article a brief outline of the manner in which Mr. LONG proposes that the London water question shall be "finally settled"; but readers of THE LANCET have considerable knowledge of the various points of a most difficult and delicate question, so that they will be able in a great measure to complete the picture for themselves.

A Water Board is to be established to regulate the supply of the area called "Water London." This body is to consist of representatives of the City of London, the Metropolitan boroughs, the borough of West Ham, the district councils of East Ham, Leyton, and Walthamstow, the county councils of London, Kent, Middlesex, Surrey, and Hertfordshire, and the Conservancies of the Thames and the Lee. The present undertakings of the metropolitan water companies are to be acquired either by agreement or by purchase, and payment for these properties is to be made in water-stock which is to yield a fixed interest of 3 per cent. The purchase price is to be settled by a specially appointed court of arbitration consisting of the Right Hon. Sir EDWARD FRY, formerly a Lord Justice of Appeal; Sir HUGH OWEN, G.C.B., late Permanent Secretary to the Local Government Board; and Sir JOHN WOLFE BARRY, K.C.B., the well-known engineer. The terms of the arbitration are to be unfettered, except that the arbitrators are not to allow anything for compulsory purchase—a point insisted upon by Lord LLANDAFF who declined to entertain the idea suggested by counsel that a shareholder in a water company could take a "sentimental interest" in a filter-bed. Such are the main lines on which the Bill is founded. It is to be regretted that in the course of his speech Mr. LONG made an inexplicable statement in regard to the London County Council which was calculated to cause annoyance to the majority of that body and could not conceivably be of service to anyone. Mr. LONG said that "if the Council felt aggrieved because they had not by this time become the water authority they must blame themselves rather than the Government or Parliament." This statement, puzzling to those who hold that the London County Council has no just claim to jurisdiction over "Water London," could not fail to be irritating to admirers of the proceedings of the London County Council, and it may have caused Sir H. CAMPBELL-BANNERMAN to give vent to some of the banalities with which he continued the debate.

No time need be spent in the contemplation of any arguments for or against the Bill which have their origin in party strife. We desire now to recall briefly the measures which have been recommended by THE LANCET for the final and satisfactory settlement of the London water question. The necessity which exists for an ample supply of good water is not obviated by the differences which exist among contending political factions as to what body or bodies would best manage the undertakings of the water companies, a fortuitous concourse of trading associations which at present give an intermittent and often unsatisfactory supply. We must insist once more on the fact that an ideal supply of water for London would ensure that the quality of the water should be pure and derived from sources beyond the suspicion of pollution, and that the quantity should be adequate, not only for domestic supplies, but sufficient to give an unstinted amount for municipal purposes. The public fountains should not be allowed to run dry, the ornamental waters of London and the canals should be clear and bright, a state of things which could only be made possible by frequent changes of the water, necessarily involving a supply greatly in excess of that which obtains to-day. It is of importance that the people of London should not be misled in this matter. It is obvious that a mere change of ownership of the existing sources will neither increase the quantity of water nor ensure its purity. At the present time the metropolitan water companies are legally, and should be in deed and in truth, controlled in many essential matters by the Local Government Board. We have frequently found it necessary to refer to the neglect displayed by the Board in carrying out its duties in this respect; and we have urged on the Government the duty which was imposed on it to obtain for the Board the additional powers of control which the BALFOUR and LLANDAFF Commissions advised were necessary for the protection of the people of London. If these powers had been obtained, as advised by these successive Royal Commissions and as we have persistently advocated, a large amount of information at present withheld by the water companies would have been in the possession of the Local Government Board.

It must not be taken for granted that purchase on behalf of the people of London of the metropolitan water companies' undertakings would be advantageous to the people. It cannot be said that the speech in which Mr. LONG introduced the measure brought forward any serious argument in favour of that hypothesis. Should the Bill pass it will

indeed relieve the Government of a great and constantly recurring source of anxiety, for it will lessen its responsibility, while from the point of view of the people of London the very fact that the control of the metropolitan water companies rests with a well-qualified Government department is a distinct advantage. There are doubtless some people who profess that popular control necessarily ensures efficiency. Experience does not prove this. The Government Bill, judged from Mr. LONG'S exposition of it, and as viewed in the light of a knowledge of the facts, appears at first sight to be an "honest endeavour" to disembarrass the Local Government Board of some of the most useful and the most arduous of its present duties. We are glad that the Bill has at last been introduced, and trust that it will receive the careful consideration which it deserves.

Suspected Poisoning by Arsenic in Beer at Halifax.

FEW features of the Manchester epidemic of arsenic-poisoning among beer-drinkers were more striking than the occurrence of peripheral neuritis, with or without symptoms specially indicative of its arsenical origin, in persons whose daily dose of arsenic in beer must have been quite small. And this circumstance has given rise to some interesting speculations, well worth pursuing by the aid of experiment, as to whether the toxic action of arsenious acid is enhanced by simultaneous administration of alcohol; or whether, in process of brewing, a compound of arsenic may be formed which has greater toxic properties with respect to nerve-tissue than are possessed by arsenious acid. However this may be, it is certain that the possible danger of small amounts of arsenic in beer cannot be disregarded.

It is now known that glucose and invert sugar are not the only substances used in brewing which are liable to be arsenical. Malt itself, on account of its exposure in the kiln to products of combustion, may contain very appreciable quantities. We have no doubt that brewers as a whole are fully alive to the necessity of exercising the greatest care in the selection of their various materials and in excluding arsenic from their beer, but the evidence given at an inquest held last week by Mr. E. H. HILLS, coroner for Halifax, goes to suggest that the precautions adopted are not invariably efficacious. At this inquest it was stated that samples of beer collected by the coroner's officer from three publicans in Halifax were sent to Mr. A. H. ALLEN, the public analyst of Sheffield, who found in them respectively one-eighteenth, one-twenty-fourth, and one-sixteenth of a grain of arsenic per gallon. Mr. ALLEN, it may be noted, is a member of the joint committee appointed by the Society of Public Analysts and the Chemical Society to examine methods of determining arsenic in beer, and although it appears from a local press report that statements were made on behalf of the brewers that other samples of their beers had been pronounced free from arsenic, there need be no hesitation in accepting Mr. ALLEN'S results in respect of the samples submitted to him. Such quantities of arsenic in beer must, we think, be considered undoubtedly dangerous. In the particular case before the coroner the victim who drank beer represented by the above samples appears to have been an old man who suffered from bronchitis which the jury found to be the cause of death. But on admission to the Halifax Workhouse Hospital he showed marked pigmentation, foot-drop, extreme tenderness of the muscles of the calf, and running at the eyes—symptoms which, as Dr. E. S. REYNOLDS and others have shown, were frequently met with during the Manchester outbreak. After death, which resulted from cardiac failure, a post-mortem examination was made and samples of the viscera were sent to Mr. ALLEN who found arsenic in the liver to the extent of about one-fortieth of a grain—a result not unlike those obtained in fatal cases during the Manchester outbreak. Having regard to these facts we are in complete agreement with the observation of the coroner that Dr. J. F. HODGSON, the resident medical officer of the workhouse hospital, acted rightly in reporting the case in order that an inquest might be held.

We publish on p. 399 an interesting letter from Dr. HODGSON with reference to the little outbreak in the hospital. For in addition to the fatal case, other patients presenting symptoms suggestive of poisoning by arsenic in beer have within the last few weeks been admitted into the same workhouse hospital, and arsenic has been recovered from the urine in certain of these cases. Although thus far these suspicious cases are few, it seems important, in view of recent experience, that they should be made the subject of official inquiry. The Arsenical Poisoning Commission appears to have been represented at the inquest, and it is to be hoped that the facts will be fully ascertained and laid before that body. In its first report the Commission advised certain precautions by which arsenic could be kept out of beer, and recommended as a provisional safeguard that standard tests for arsenic in ingredients of beer should be laid down by the Board of Inland Revenue and should be made compulsory at breweries. These tests, however, have not yet been promulgated, and the occurrence at Halifax suggests that the presence of arsenic in beer may still be detected at the bedside earlier than in the laboratory. Having regard to this possibility it seems very desirable that the occurrence in relation to beer of alcoholic neuritis, or other forms of illness which suggest the possibility of arsenic, should continue to be closely watched by medical officers of hospitals and workhouse infirmaries and by the public authorities concerned. We congratulate Dr. HODGSON on having been alive to the situation.

The Reform of the Army Medical Service.

IT may be in the recollection of our readers that a communication from Professor T. CLIFFORD ALLBUTT upon the causes of the neglect of the Army Medical Service among certain university students, and upon the means proposed to increase its attractions, was published in the *Times* in November last. In a subsequent letter which appeared in that journal on Feb. 3rd Professor ALLBUTT returns to the subject, and, in ratification of the correctness of the impressions and opinions that he had previously expressed—to the effect that the lack of scientific spirit and method in the service is the main cause of the

indifference of the more highly educated graduates in medicine—he quotes from a letter received by him from an able and experienced army medical officer. As a rule, army medical officers, from scruples which if at times inconvenient or even fastidious are nevertheless to be honoured, regard themselves as precluded from public controversy in such matters even after their retirement from the army. We may therefore attach some importance to such expressions of opinion when we get them.

Professor ALLBUTT'S correspondent shows that he is animated by a proper appreciation of science, and he knows how to express his views vigorously. In regard to the proposed multiplicity of examinations he strongly supports the objections entertained by Professor ALLBUTT, and, we may add, by almost everybody else who has given any thought to Mr. BRODRICK'S scheme in the form in which it was originally published; and he calls attention to the writing up of case-books without any regard to the interest of the cases recorded as one of the bugbears of station hospital life, at the same time pointing out how these case-books could be greatly turned to account, if properly used, in forming an estimate of a medical officer's ability, merits, and fitness for promotion. The fact must, we think, be admitted that there has hitherto been little or no encouragement in the service for the cultivation of a scientific spirit or for the exhibition of professional merit. Professional skill and zeal led nowhere and brought no success or satisfaction beyond that which belongs to a sense of duty conscientiously done. It has been through military rather than medical channels that rewards have come to the Army Medical Service. We have often lamented that this should be so, as our readers know, and have expressed keen hopes of seeing it altered, and medical officers relieved, as far as practicable, of many irksome clerical duties so that they may have more leisure for important study. Professor ALLBUTT'S correspondent also alludes to the supply of medical and surgical appliances and instruments for the Army Medical Service. It is needless to say that all that is required for the sick and wounded in our army should be available and should be of the best patterns. But it has to be recognised that the supply of instruments and remedies, and their preservation in a good state under all the conditions affecting the army at home and abroad, must be often attended with financial and administrative difficulties, especially considering how the tendency is for such stores to become obsolete.

Two other points in Professor ALLBUTT'S letter call for comment. He writes:—

> "However welcome an increase of pay may be to all of us, whatsoever our callings in life, such increase is not a cardinal factor in the reformation of the Army Medical Service. As in the combatant ranks, so in the scientific, there are many able men who would find compensatory attractions in the service. ..... The medical officer, as such, lies under no social disadvantage; on home and foreign stations alike, a well-bred and pleasantly-tempered man finds himself received on terms of intimacy and equality in all military and social circles."

These are the views alike of Professor ALLBUTT and of his correspondent. Whilst concurring generally in them we cannot shut our eyes to a matter which medical officers may consider it undignified to notice, but which should not be altogether ignored—namely, the reprehensibly exclusive action of some of the service clubs in regard to the medical officers of the army. Young men of good social standing and training will not join a service in which their brother officers refuse them social equality. As long as the army medical officers find it difficult to secure election to the service clubs, simply because of the branch of the service to which they belong, so long will a certain section of young medical men hold aloof from that branch. Nor do we think that the question of pay can be left quite so much in the background as Professor ALLBUTT would leave it. Many letters in our columns have shown that the question is a very prominent one in the minds of the officers of the service.

Dr. C. B. BALL, a member of the new Advisory Board, has recently delivered an address to the Dublin Branch of the British Medical Association, on the Re-organisation of the Army Medical Service, in which he recognised that the pecuniary considerations must not be neglected. His assurance that no intention existed to deprive medical officers of their right to retire under existing regulations on £1 a day after 20 years' service is satisfactory. Although we never quite believed that such an intention really existed, it must be confessed that the wording of the report of Mr. BRODRICK'S Committee in this respect was vague. In some other matters—as regards the questions of examinations and of increased pay to medical officers whilst serving in India for example—Dr. BALL expressed his belief that certain changes would be made and a satisfactory settlement would be arrived at. He likewise gave some interesting details relating to the proposed establishment of a large military hospital in London with a staff college attached. This he regarded as a very important step and one which, he said, to his surprise, had attracted but little notice. He will find, however, that this was a point specially dwelt upon in the series of articles upon the Army Medical Service which appeared in THE LANCET during the past year.

Annotations.

"Ne quid nimis."

THE WEST AFRICAN MEDICAL STAFF.

THE Colonial Office has announced that the medical services of the West African colonies and protectorates—viz., the Gambia, Sierra Leone, the Gold Coast, Lagos, Southern Nigeria, and Northern Nigeria—will in future form one service under the name of the West African Medical Staff. All the medical officers will be selected by the Secretary of State for the Colonies, and will be on one list of employment and promotion. The grades and salaries are as follows: principal medical officer, with a minimum salary of £1000, rising by annual increments of £50 to a maximum of £1200; deputy principal medical officer, with a salary of £700, rising by annual increments of £25 to £800; senior medical officers, with salaries of £600, rising by annual increments of £20 to £700; and medical officers, with salaries of £400, rising by annual increments of £20 to £500. For Sierra Leone and Lagos the principal medical officer has £800 per annum, rising to £1000. Various extra allowances are made under the head of horse or hammock allowance, out-of-pocket travelling expenses, field or bush allowance, and allowances on military expeditions.

An allowance of £12 will be paid to every medical officer on first appointment for the purchase of camp outfit, particulars of which are given. The ordinary tour of residential service is one year, followed by leave with full pay during the voyages to and from England, and for four or two months clear in England, according as the officer is returning for further service in West Africa or not. Every medical officer, unless specially exempted, is engaged in the first instance on probation for one year, and if he is found not qualified for efficient service his appointment may be cancelled at any time within the year. Private practice is allowed under certain conditions. Free furnished single quarters are provided at all the recognised stations; further information on this point may be obtained at the Colonial Office. On attaining the age of 50 years, or after 18 years' service, an officer is qualified for a pension, or in the alternative he may retire at the end of nine years with a gratuity. Applicants for appointment must be of European parentage, and be between 25 and 35 years of age, and must possess a complete double qualification. Preference will be given to unmarried candidates. They should, in the first instance, apply in writing to the Assistant Private Secretary to the Secretary of State, Colonial Office, Downing-street, London, S.W., stating their qualifications generally and inclosing a certificate of birth. A form of application will then be forwarded to them to fill up and to return together with testimonials. Candidates selected for appointment will be required to attend either the London or the Liverpool School of Tropical Medicine, the cost of the tuition, fees, board, and residence, being borne by the Government.

VACCINATION AND SMALL-POX.

THE Registrar-General's return for the week ending Jan. 25th contains a table and explanatory remarks, which appear to us so important at the present time as to deserve insertion in our columns. We cannot doubt that this information will be welcomed by those amongst the anti-vaccinationists (if there be any) who still desire to know the truth in such matters. In the following table the deaths from small-pox which have been registered from the beginning of the present epidemic down to Jan. 11th, 1902, are classified in minuter detail as regards vaccination than was possible at the date of issue of the several weekly returns:—

—	Ages at death.								
	All ages.	Under one year.	1–5.	5–10.	10–15.	15–20.	20–40.	40–60.	60 and upwards.
Vaccinated in infancy only	130	—	—	—	1	3	76	45	5
Revaccinated more than 10 years ago	3	—	—	—	—	—	1	1	1
Revaccinated less than 10 years ago	—	—	—	—	—	—	—	—	—
Vaccinated, only after infection by small-pox	14	7	2	—	—	1	4	—	—
Unvaccinated	116	10	35	14	16	15	19	6	1
No evidence of vaccination	9	—	—	—	1	—	5	3	—
Stated to have been vaccinated; scars, if any, obscured	28	—	—	3	1	—	12	10	2
Total	300	17	37	17	19	19	117	66	9

The table shows that out of those children and young person under 20 years in the population of London who were not protected by vaccination, 100 have recently died from small-pox; whilst only four deaths from that disease have occurred among those of the same ages who were ascertained to have been vaccinated in infancy. There are also five cases in which the evidence was insufficient to warrant a definite statement as to vaccination. If the extreme course be taken of counting these five cases with the vaccinated, the figures will show at least 100 deaths from small-pox among the unvaccinated section of the population under 20 years of age, and at most nine deaths among the vaccinated section at the same ages. At ages over 20 years there were 30 deaths of persons who were admittedly unvaccinated, 126 of persons who had been vaccinated in infancy but not revaccinated, and three of persons who had been revaccinated. In all these three cases revaccination had taken place more than 10 years ago, and in two of them it is uncertain whether the operation was successful. There are also 32 cases at these ages in which the facts as to vaccination could not be definitely ascertained. In 24 of these cases statements were made to the effect that the deceased had been vaccinated, but in none of them was it claimed that the deceased had been revaccinated. Medical practitioners would greatly facilitate the classification of deaths from small-pox in the Registrar-General's office, if they would add to their certificates (*a*) the duration of the disease (i.e., the time between attack and death), and (*b*) the date of vaccination when this is known.

LABELS AND LIABILITIES.

IN our issue of Jan. 4th, p. 44, we referred, in regard to a recent regulation of the General Medical Council, to Section 17 of the Pharmacy Act of 1868 and expressed the opinion that according to this section medical men who dispensed their own medicines containing scheduled poisons were, if they obeyed the strict letter of the law, compelled to label whatever vessels contained the medicines in question with their names and addresses. If this reading of the Act is correct, as we believe it to be, a new difficulty arises for medical men dispensing scheduled poisons. As a correspondent points out (his letter will be found in another column) the practitioner seems to be torn between the appearance of self-advertisement and a breach of the law. This arises from the condition before referred to which, according to the Pharmacy Act of 1868, applies alike to medical practitioners and to persons registered under that Act. Although the former are specially exempted from certain conditions imposed upon the latter as regards medicine containing a scheduled poison, yet this provision includes them too—viz., "that such medicine be distinctly labeled with the name and address of the seller and the ingredients thereof be entered with name of person to whom sold or delivered in a book to be kept by the seller for that purpose." The second part of this provision is answered by the practice, universal we imagine with even the most busy or more careless of practitioners, of entering prescriptions in a book against the name of the patient for whom the medicine was prescribed. Such a practice is obviously necessary even from the merely business point of view to facilitate the accurate making up of accounts. It is the first part of the condition, however, which has so perturbed our correspondent, and we cordially sympathise with his consternation. It seems to him to savour of advertisement and, in a way, to level the position of the medical man who dispenses his own medicine to that of the druggist in his shop for the practitioner thus to label with his name and address the bottles or boxes in which medicines are sent or given out that happen to contain as ingredients one or more of the scheduled poisons. If the law did not happen to require such a step would it not be exactly the kind of thing to which the General Medical Council, sensitive of the dignity and propriety of

the profession, would make vigorous objection? As a matter of fact, such a practice is obviously distasteful to the general medical practitioner, for we imagine that this little piece of legal requirement will be news to many, as the practice of it is certainly by most honoured far more in the breach than in the observance. We are unaware that either the General Medical Council or any legal body has ever found fault with a practitioner for thus ignoring a provision of the law and we very much doubt whether such a contingency will arise. To this extent, therefore, our correspondent's fears are ill-founded and we can only wish him, and doubtless hundreds of his fellows, a continued immunity from interference for neglecting a legal requirement the observation of which appears derogatory to their professional dignity. The subject of the sale of poisons is, however, now under the consideration of a Parliamentary committee.

THE POLICE OF LONDON IN 1900.

THE report annually issued by the Chief Commissioner of Police of the Metropolis, like some other works of the same kind, loses a little of its interest owing to the length of time apparently necessary for its compilation. At the beginning of 1902 we feel an indifference towards the statistics of 1900 that we should not feel towards those of 1901. If, for example, the tables that Sir Edward Bradford now submits to us showed a sudden increase of a particular form of crime, or an unwonted mortality in the police force from some unusual cause, we should feel that, as far as extraneous influence or criticism was concerned, the opportunity was over. The present report, however, does not show anything abnormal, although it contains much that is of interest. Turning to the section of it which is signed by Mr. A. O. Mackellar, chief surgeon of the metropolitan police, we find the average daily diminution of this little army of about 15,800 men from sickness to have been 3·33 per cent. The different form adopted in the reports of the county and borough police forces does not enable us to make a general comparison as to this, but if we turn to the statistics of the county and borough police forces for the year ending Sept. 29th, 1900, and observe the Liverpool figures for example, we see that the conditions of London life render the lot of a Metropolitan constable a happier one than that of his comrade in the north. During the three days in which the Liverpool police were inspected over 5 per cent. were absent through being on the sick-list, while there were 1363 convictions in 1899 for assaults committed on the Liverpool police, a body of 1460 men, as compared with 2807 convictions for assaults in 1900 upon the London force, which has an authorised strength of 15,847. Assaults are, of course, not the only causes of the injuries which put a policeman on the sick-list. Mr. Mackellar divides these injuries into two classes—those received in the execution of duty and those received from accidental causes whilst on duty. In the former class 2867 men, when making arrests, were assaulted or injured by prisoners and other persons, 77 were injured when stopping runaway horses, and 53 were bitten by dogs and seven by horses. As instances of the second class may be mentioned 291 cases of injury by slipping in the streets or when examining premises, while 101 cases arose from accidents connected with horses. The liability of the police to suffer from disease may best be gauged by the tables of deaths and of the causes of retirement through being invalided. Pneumonia accounts for 20 out of a total of 86 deaths, but two of these cases appear to have been among army reservists serving in Africa. Cardiac disease caused death in six instances. Disease of lungs accounts for 15 cases of retirement, "rheumatism, rheumatic gout, and sciatica" for 12, neurasthenia for eight, cardiac disease for eight, and varicose veins for seven, the total number of retirements also being 86. In another table we find the number of men placed on the sick-list owing to diseases due to exposure in the first half of the year compared with those similarly affected in the second half.

Table of the Chief Diseases of Exposure in 1900.

Disease.	Half-year ending June.	Half-year ending December.
Rheumatism, "chronic and muscular"	521	451
Catarrh	1490	626
Bronchitis	184	62
Tonsillitis	250	221
Totals	2445	1360

Of the sick and injured of the police there were admitted to general hospitals on the recommendation of the chief surgeon or divisional surgeons, and with the consent of the Commissioner, 202, and to cottage hospitals 100. Evidence of the high moral standard maintained in the metropolitan police is to be found in the fact that in this large force of men in the prime of life there were only 18 cases during the year of suspension from duty owing to venereal disease. Passing from vital statistics to other matters, the figures relating to the licensing of public vehicles are of some medical interest. Many Londoners as they pass middle age are inclined to regret the preponderance of hansom cabs over the steadier and less draughty variety with four wheels, particularly in cold and wet weather, and are also obliged frequently to find fault with the odoriferous and insanitary qualities of the "four-wheeler." The numerical preponderance of the hansom cab is not so great in fact as it is apparently, but no doubt a large number of "four-wheelers" are exclusively employed at railway-stations. In 1900 there were 7,531 two-wheeled hackney carriages licensed and 3721 four-wheeled, being an increase of 87 four-wheeled and a decrease of 28 two-wheeled vehicles. By the way, we note that the official name for a four-wheeled cab is a "clarence," a title originally given to vehicles of the brougham class out of compliment to the Duke of Clarence, afterwards William IV. In perusing this portion of the Commissioner's report we might speculate on the cerebral conditions which cause 3239 persons to leave their purses and 180 persons to leave their watches in public carriages; the other articles, such as rugs and umbrellas, found by drivers and conductors and deposited with the police being more suggestive of temporary forgetfulness. We regret to observe that although the convictions for furious driving appear to have a tendency to diminish, the convictions for drunkenness among cab-drivers and omnibus-men were higher in 1900 than in the preceding year. The increase, however, is not important, and, as we have said, we feel inclined to regard 1900 with an indifference that we should not accord to 1901.

PARALYSES IN WHOOPING-COUGH.

DR. PAUL VALENTIN of Paris in a recent *Thèse de Paris* (1901) refers to the little-known subject of paralyses in whooping-cough, a matter of practical importance especially in regard to prognosis. The occasional occurrence of paralysis after whooping-cough was noticed in the eighteenth century by Sydenham, who noticed the fact that infants affected with it may have difficulty in walking. Dr. Valentin has collected from medical literature a total of 83 observations on paralyses in whooping-cough, including a number of personal observations, and summarises his results as follows. 1. Psychoses and neuroses are rare accidents of whooping-

cough, the commoner nervous lesions being convulsions or paralyses. The development of paralyses is due to a "cerebral lesion of an inflammatory or mechanical character," resulting from the whooping-cough. 2. The following table gives a *résumé* of the nervous accidents which may result:—

1. Psychoses	a. Delirium, hallucinations. b. Depression of spirits (apathy). c. Imbecility.
2. Neuroses	a. Hysterical attacks. b. Epileptiform attacks. c. Choreiform and other convulsive attacks.
3. Motor Troubles	a. Convulsive—e.g., eclampsia, cramps, and spasm of the glottis. b. Paralytic—e.g., hemiplegia, monoplegia, and aphasia.
4. Sensory Troubles	a. Anæsthesia. b. Deafness. c. Blindness.
5. Rare forms of sclerosis—e.g., bulbar and disseminated sclerosis, and possibly Friedreich's disease.	

3. The total number of cases of paralyses in whooping-cough investigated was 83. Of these 25 were recorded prior to 1880, 18 were recorded during the period 1880 to 1890, 10 during the period 1890 to 1895, and 30 during the period 1895 to 1901. Most of the cases included in the last group were studied personally, and from his observations Dr. Valentin concludes that such paralyses must be more frequent than is commonly supposed, since during six years 30 cases were observed. 4. In 62 cases the ages are mentioned, 58 being children of from one to 12 years of age. The largest proportion of paralyses was met with during the ages from two to six years inclusive. 5. The proportion of paralyses in boys was one-half of that of girls, and as whooping-cough in general affects children in the proportion of four boys to five girls (as shown by the extensive statistical tables of Dr. West), it is concluded that the female child has a greater proclivity to paralysis from whooping-cough than has the male. 6. The cerebral paralyses observed were distributed as follows: 16 were examples of monoplegia (of the arm and less frequently of the face) or loss of speech or sight; 40 were cases of hemiplegia (right-sided in 21, left-sided in 15, and not stated in four); while paraplegia was rarer and affected only five or six cases. Right-sided hemiplegia was often accompanied by aphasia. 7. Paralyses from ponto-bulbar or spinal lesions were distinctly rare, only two cases of each class having been met with. 8. Necropsies conducted in several cases showed that the nervous lesions underlying the paralyses were hæmorrhage and softening and that occasionally minute hæmorrhages gave rise to small foci of sclerosis. 9. The prognosis in the case of paralyses from whooping-cough was very grave. Of 64 cases specially investigated in this connexion it was found that 14 patients died, 22 remained permanently paralysed and enfeebled, and the rest (two-fifths of the whole number) recovered almost completely.

THE CAUSATION OF EPILEPSY.

AN interesting discussion at the New York Academy of Medicine on the Causation of Epilepsy, recorded in the *Medical News* of Jan. 11th, was opened by Dr. Louise Robinovitch, who based her observations on a large number of cases studied at the Asile St.-Anne, Paris, under Professor Magnan during the last few years. From these observations it appeared that in the majority of cases a history of alcoholism could be obtained in the parents of the epileptics. Epilepsy in this respect seemed to be associated collaterally with insanity. Thus of 140 patients whose histories were carefully followed up 90 proved to be descendants of alcoholic parents—a proportion of 64 per cent. In addition to this must be noted the proclivity to infantile convulsions in the offspring of alcoholic parents. Dr. W. C. Hollopeter of Philadelphia cited the case of a professional friend whose brothers were epileptic, this condition being probably the result of parental alcoholic intemperance. Dr. Bell of New Jersey stated that he had under his care a family of seven children, most of whom suffered from some form of nervous disorder resulting from the hereditary taint transmitted by the father who was a confirmed dipsomaniac. In another case known to him of a family of six children, five of whom were neurotic, ancestral alcoholism was held to be the predisposing cause. He, however, cited the case of a young woman who had epileptic attacks regularly before and after her catamenia, probably as the result of malarial infection, alcoholism as a cause being positively excluded in this instance. Dr. Berg contended that many working men who took from six to eight glasses of beer a day (the equivalent of two litres of *vin ordinaire* in France) could not be designated as alcoholics. Dr. Robinovitch, in reply, stated that two litres of wine were regarded as excessive in France by the highest medical authorities, and that such an amount of alcohol was more prejudicial to the excitable Frenchman than to the phlegmatic German, and that it predisposed to epilepsy.

SMALL-POX IN LONDON.

THE number of cases of small-pox in London continues to increase. Thus, on Friday, Jan. 31st, there were 93 fresh cases notified and removed; on Saturday, Feb. 1st, there were 75 fresh cases; on Sunday, Feb. 2nd, there were 42 fresh cases; on Monday, Feb. 3rd, there were 75 fresh cases; on Tuesday, Feb. 4th, there were 32 fresh cases; and on Wednesday, Feb. 5th, there were 37 fresh cases. No medical man wants to be told that vaccination and revaccination are the sheet-anchors in the struggle against small-pox, but it is often difficult to persuade persons who ought to be vaccinated or revaccinated to undergo the operation. The reasons for this are various. In the case of a very few persons it is due to sheer pigheaded obstinacy, in many to ignorance, and in many more to a fear that they will lose a day's work or even more owing to being laid up. In reference to this point the Rev. S. A. Barnett writes from Toynbee Hall to the *Times* of Feb. 4th as follows:—

> A firm employing a large number of people in this neighbourhood gave notice that a doctor would attend at the works and that no one should lose wages on account of loss of time consequent on the operation. The people in response to this notice willingly offered themselves, "even the anti-vaccinators." Perhaps, Sir, other firms and employers, learning through your columns of such public-spirited action, may themselves do likewise and so the plague may be stayed.

We warmly congratulate the firm in question upon their action, and can only echo Canon Barnett's plea that other firms and employers should go and do likewise.

THE COMING OF THE SANITARY ENGINEER.

THE address to the Institute of Sanitary Engineers at the opening meeting of the session of 1902, which was held recently, was given by Dr. J. C. Thresh, the President of the Institute. He pointed out that sanitary engineers existed more than 2000 years ago and that the remains of the sanitary works of ancient Rome still excited our wonder and admiration. But when the Roman empire and Rome itself were destroyed by the barbarian invasions aqueducts were thrown down, and the escaping waters flowed over the plain and forming marshes greatly contributed to the spread of malaria, while the sewers were choked up so that plagues and fevers had a fertile breeding-ground. Mediæval cities with their crowded populations were in a filthy condition, and even as late as the year 1842 the report of the Royal Commission appointed to examine into the sanitary condition of the labouring population revealed an appalling state of matters. In 1848 the first Public Health Act was passed and the sanitary engineer, after having been in abeyance for some 1500 years, again came into existence.

Much still remained to be done, especially, concluded Dr. Thresh, with regard to the question of the housing of the working-classes. He pointed out that in many rural districts the local sanitary authorities had no control over the materials of which buildings were to be constructed and he suggested that the Institute should consider this subject with a view to improve the regulations of the Local Government Board. He might have added that in many instances the local builder is a member of the town council or sanitary authority with disastrous results. Not so very long ago our contemporary *Truth* pointed out a disgraceful state of matters existing at Reigate. Our sanitation has undoubtedly improved within the last 50 years, but the shoddy house built upon what is euphemistically termed "made ground" is still to be found. The penalties for insanitary or defective building or plumbing should be made really prohibitive.

THE DISTRIBUTION OF PLAGUE.

A TELEGRAM from the Governor of the Mauritius, received at the Colonial Office on Jan. 31st, states that for the week ending Jan. 30th there were 12 cases of bubonic plague, of which 9 proved fatal. As regards Egypt, during the week ending Jan. 26th 15 cases and 16 deaths have occurred from plague in Egypt: 14 cases and 14 deaths have been reported from Tantah, 1 case and 1 death from near Zifteh, and 1 death from Mit Ghamr. During the last week only 7 deaths have occurred out of hospital, in comparison with 13 during the week ending Jan. 19th. The disease at Tantah is confined chiefly to the Soudanese population, and this accounts for the heavy hospital mortality, as these people succumb to the disease much more readily than do the Fellaheen.

EXAMINATION OF THE BLOOD FOR THE TYPHOID BACILLUS AS A MEANS OF EARLY DIAGNOSIS OF TYPHOID FEVER.

TYPHOID bacilli have been found by a number of observers to be present in the blood with great frequency—in from 70 to 80 per cent. of their cases. At the meeting of the Société Médicale des Hôpitaux of Paris on Dec. 27th, 1901, M. Jules Courmont pointed out the great value of this fact in the early diagnosis of typhoid fever, especially when Widal's reaction failed. He examined the blood in nine cases and succeeded in obtaining the bacillus in pure culture in all. The blood was taken aseptically at the bend of the elbow and was cultivated in small flasks containing 20 cubic centimetres, and in larger ones containing from 300 to 1000 cubic centimetres, of bouillon. Into the smaller ones some drops of blood were received and into the larger ones from two to four cubic centimetres. Incubation took place at 37° C. The bacilli obtained showed all the typical characters of typhoid bacilli. M. Courmont drew the following very important conclusions. 1. The typhoid bacillus was present in the blood in all ordinary and grave forms of typhoid fever (the question of slight and abortive forms he reserved). 2. It appeared early in the disease. He found it as early as the fifth day (he had not an opportunity of examining the blood earlier). It remained in the blood until the end of the third week. It might persist longer in fatal or prolonged cases. At necropsies it might be found in the general circulation. The best method of obtaining cultures was to cultivate from two to four cubic centimetres of blood immediately after it was taken in from 300 to 500 cubic centimetres of bouillon. If the bouillon was not turbid at the end of 24 hours the deposit should be shaken up. With the small quantities of bouillon M. Courmont was successful in only 21 per cent. of the cases. The agglutinability of the bacilli was usually inferior to that of those employed in Widal's test; it increased in the successive generations in bouillon until it became equal to that of Widal's test. There was no relation between the presence of the typhoid bacillus in the blood and the agglutinating power of the serum. The bacillus was found in the blood in four cases at an earlier period than that at which the Widal reaction could be obtained. In two it was found on the fifth and ninth days respectively, while Widal's reaction was not obtained until the twenty-second and forty-fifth days. These observations show the great diagnostic value of examination of the blood for the typhoid bacillus, especially when Widal's test is negative.

THE NEW MEDICAL OFFICER TO THE LONDON SCHOOL BOARD.

DR. JAMES KERR of Bradford has been elected to the post of medical officer to the London School Board. Dr. Kerr, who has acted as medical superintendent of the Bradford School Board, was educated at Cambridge and St. Bartholomew's Hospital, graduating as M.D. in 1891. He is well acquainted with the various subjects bearing on school hygiene and has written much on the subject. Dr. Kerr will receive a salary, to commence with, of £800 per annum, which will eventually rise to £1000. We are glad to see that he is to give his whole time to the service of the Board.

DANYSZ'S VIRUS AS A DESTROYER OF RATS.

SOME years ago Dr. Danysz of Paris discovered a bacillus which has been called the bacillus typhi murium (Danysz). It was shown to be pathogenic for rats, and its discoverer suggested that it might be employed instead of other poisons to kill these animals. It was further urged that the bacillus was harmless to man and domestic animals. Further investigations went to show, however, that when practically applied the proposed method was not satisfactory. In THE LANCET of August 17th, 1901, p. 440, we published a communication by Dr. Klein and Dr. Herbert Williams, entitled "Experiments with the Danysz Rat Bacillus." These observers showed that when rats were fed with cultures of the bacillus death only resulted in about 33 per cent. of the animals. But when a number of rats were fed on guinea-pigs which had died after inoculation with virulent culture the percentage of dead rats was certainly increased. When, however, similar experiments were tried in a warehouse the results were entirely negative. The observers also added a useful warning when they said that all laboratory experiments on rats kept in captivity must be conducted with care, since these animals are liable to succumb spontaneously. In THE LANCET of Sept. 28th, 1901, p. 868, we drew attention to similar experiments conducted by Dr. M. J. Rosenau, assistant surgeon, United States Marine Hospital Service; his results showed that this virus was not likely to prove of any special value as a rat destroyer on a wholesale scale. In our Berlin letter of last week (Feb. 1st, p. 341), we published the results of investigations by Dr. Abel, a medical officer of the city of Hamburg. He found that by feeding rats on the livers and spleens of rats that had died after inoculations of the bacillus the toxic action could be continued through six generations. Attempts were then made to destroy rats in some localities where they happened to be abundant, pieces of bread treated with cultures of the bacilli being placed where the rats would be likely to find them. The results presented considerable variety, but were more successful than in the attempts which we have referred to above. If by means of the Danysz bacillus measures could be adopted by which rats could be destroyed the plan would be of considerable value where an epidemic

of plague was threatened. It is evident, however, that no trustworthy method has yet been discovered. From the partial success obtained by Dr. Abel, however, it may be hoped that further investigations will be made and also that the statement will be corroborated that the Danysz bacillus is harmless to man and to domestic animals.

POPULAR LECTURES ON HEALTH QUESTIONS.

SANITARY science is of comparatively modern creation, and the slowness with which its teachings are accepted in some quarters makes it all the more desirable that every means should be used to arouse general interest in measures which have for their object the preservation of health. Popular lectures may do good service in this respect, provided that the lecturers are themselves well informed and possess the valuable faculty of imparting their knowledge in an easy and untechnical manner. In a lecture on Matters connected with the Life and Health of the Public, delivered at Southend by Dr. J. T. C. Nash, the medical officer of health, both these conditions have been realised, and the Health Committee of that town has acted in the public interest by having a summary of it printed and extracts made for distribution. Dr. Nash showed that free ventilation, efficient disinfection, and general cleanliness, municipal and personal, were synonymous with the destruction of pathogenic bacteria, and conversely that municipal and personal uncleanliness were the principal factors in the production of disease. Under the heading of small-pox he explained in simple but impressive phraseology that efficient vaccination was the only protective against the infection, but that after the lapse of some years the immunity gradually became less and revaccination was required.

CHOLERA AND FAMINE IN BENGAL.

IN a paper entitled "Bengal—the Land and its People," read before the Society of Arts on Jan. 23rd, Mr. Francis Henry Skrine made some interesting remarks on the origin of cholera and famine in our Eastern dependency. Mr. Skrine, although not a medical man, has had a large Indian experience, and in 1891, whilst magistrate-collector of Rungpore, he was more than once officially thanked by the lieutenant-governor of the province for the work done by him in connexion with an outbreak of cholera. The disease, he says, is indigenous to Bengal, but there is reason to suppose that its appearance in an epidemic form is of comparatively modern date. The Mughal sovereigns used to spend the greater part of each year in perambulating their empire, attended by hundreds of thousands of followers, but these progresses would be impossible at the present day, for a "camp" on anything like the old scale would speedily be dispersed by cholera. Some soldiers disbanded after the European peace obtained grants of waste land in 1816 in the Sundarban, an alluvial tract on the fringe of the Bay of Bengal, and in clearing the ground and bringing the soil under cultivation they seem to have let loose the cholera germ. In 1817 Jessor, the district to which the Sundarban at that time belonged, was desolated by cholera. The disease then spread to Calcutta, caused many deaths in Lord Hastings's army opposed to the Pindaris, and travelled to Eastern Europe by the caravan routes, striking Paris and London in 1831. In Indian towns with a pure water-supply cholera appears only in a sporadic form; in country districts it is connected with the tax on salt, for salt is so dear that it is seldom given to cattle which satisfy their craving by devouring excrementitious matter, and in this way Mr. Skrine believes milk is infected with the cholera germ. In the causation of famine the most important factor is an ill-distributed and improvident peasant proletariat and the next is the deterioration in the productive power of the soil. The staff of life is rice, and if the crop fails, as it must do if the monsoons in July and October do not bring rain, there is nothing cheaper to fall back upon. An acre of land unreached by silt from the rivers now produces only 800 pounds of food grain, whereas in the days of Akbar the average yield was 1400 pounds.

A PLEA FOR THE SEALED MILK-CAN.

THE milk supplied to towns necessarily travels some distance from the point of production before it reaches the consumer, and it is desirable that on its journey by road or rail precautions should be taken, not only to prevent its contamination, but its adulteration also. If milk can be watered *in transitu*, and there is no doubt that such adulteration often takes place on the way from the milk-shop to the house, the milk has necessarily also been exposed to the risk of contamination. The man with the barrow is not always above suspicion. There is no doubt that often good genuine milk is sent out of the shop and is afterwards mysteriously mixed with water before delivery. When large vendors are convicted of selling watered milk the defence is invariably raised that the milk was sold exactly as it was received from the farmer. Then when the farmer declares that he dispatched the milk just as it came from his cows, suspicion falls upon the railway servant or the inference is made that the tampering occurred on the railway. In both cases, therefore, of the tampering with milk, on the barrow and in the train, we possess a strong argument in favour of all milk, wholesale or retail, being supplied in sealed cans. It, however, has been stated pretty freely in court that the railway companies will not allow milk consignors to seal or to lock their cans, as it would interfere with the examination, the measuring, or the weighing of the contents. As a matter of fact this is not so, as has recently been shown by the medical officer of health of Islington, who has elicited a very definite answer upon the subject from the Railway Companies' Association. The reply was to the effect that "senders have been for a long time allowed to send milk in sealed cans, the companies accepting the declaration of the senders as to the quantity conveyed, no extra charge being made." The only condition which the companies require to be fulfilled is that the true weight of each can shall be stamped on the outside of the can, so that in case of doubt the quantity of milk within the can can be approximately ascertained by allowing 10¼ pounds for each gallon of milk declared. There is thus no difficulty in senders protecting themselves against alleged loss of milk *in transitu* by sealing, padlocking, or otherwise fastening the cans. It would be better still if the companies refused altogether to carry milk except in fastened cans—a step which, if adopted, would undoubtedly reduce the rate of milk adulteration and at the same time destroy the common and miserable defence of the large wholesale milk vendors that the farmer, the railway servant, in fact anybody but themselves was guilty.

SMALL-POX AND ISOLATION.

ISOLATION hospitals are without doubt most useful institutions, but unless they are managed with a due regard to the risk of infection they become neither more nor less than centres of extreme danger. If we may judge from certain statements made at a meeting of the Barnet Rural District Council held on Jan. 23rd, the Clare Hall Small-pox Hospital at South Mimms seems to be managed in a manner which may mildly be stigmatised as careless. A letter was read from Mr. Sirey, landlord of the Guinea Inn at Ridge, wherein he contended that "this hospital or lodging-house for small-pox is not an isolation hospital at all." The writer also stated that the engineer and various members of the staff lived in the village, also that some of the patients, when well enough

to walk in the grounds, had scaled the fence and had gone to the public-house. Female convalescents had been seen shaking hands with, and talking to, people over the fence. Councillor Clarke stated that the Local Government Board had been communicated with, but had replied that it had no authority to interfere. After some further discussion it was decided to send Mr. Sirey's letter to the Local Government Board, Councillor Clarke mentioning that there were 50 men working on the place at the present time. The other night he watched the gate and saw 29 men come out, 14 of whom were going to St. Albans. When asked if they were disinfected before leaving they replied "No." We can scarcely believe that such a monstrous state of matters as is implied in the above quoted statements really exists, but perhaps the South Mimms Small-pox Hospital authorities will kindly explain or deny the charges made. Our columns are open to them.

AT a meeting of the Medical Committee of the Hospital for Consumption and Diseases of the Chest, Brompton, held on Feb. 5th, it was unanimously resolved :—

That the medical staff of the Brompton Hospital repudiate all responsibility for statements with reference to treatment of consumption by intravenous injection which have recently appeared in a daily journal. The treatment in question is being tried by some members of the staff, but as yet no trustworthy results have been demonstrated.

THE Edinburgh University Club of London will hold its annual dinner at the Criterion Restaurant on Wednesday next, Feb. 12th, at 7.15 P.M., under the chairmanship of Dr. T. J. Maclagan.

PROFESSOR VON BERGMANN has been appointed a member of the German Privy Council.

Pharmacological Notes.

THE INJECTION OF OXYGENATED WATER IN THE TREATMENT OF INFANTILE DYSENTERY.

DR. ROCAZ,[1] in a contribution to the Société de Médecine et de Chirurgie de Bordeaux, recommends the injection of oxygenated water in the treatment of dysentery of children, especially where there is suppuration. Similar treatment has been employed previously by Blech in cases of the gastro-enteritis of children. Oxygenated water is scarcely toxic and is employed as a powerful antiseptic. Two or three injections are administered daily of oxygenated water ("10 volumes" in strength) diluted with five times its volume of warm sterilised water. Each of these injections is preceded by an evacuant injection. The quantity of liquid used depends on the age of the patient and still more on the toleration of the large intestine. In order to be efficacious the injection should be maintained as long as possible and should penetrate deeply. To this end it is well to employ a rather long but very supple tube, since the largest dysenteric lesions are situated on a level with the rectum. The patient should lie first on one side, then on the other, in order to bathe the whole of the colon with the liquid. Thus administered the injections are easily tolerated and cause no pain. Dr. Rocaz has treated 12 severe cases of dysentery by this method in children aged from two to 12 years; all have improved rapidly after the first two or three days. The stools quickly change in appearance and contain less pus, and less blood, and are less frequent, the sphincter regains its function, tenesmus and abdominal pains disappear, fever, when present, subsides, the general condition improves, and in eight or 10 days the affection is completely relieved. It is necessary, however, to continue the treatment several days after apparent recovery until the stools become normal both in quantity and in quality, otherwise a relapse may ensue. Two cases are particularly mentioned. In the first a girl, aged eight years, was put under the treatment, though her recovery was not expected. Vile-smelling pus, mixed with blood, was constantly escaping from the anus. In two days the odour was less fœtid and the patient gradually recovered. The other patient, a child three years old, was put under the treatment after having been affected with dysentery for more than a month. In addition to the usual symptoms fever and vomiting were in evidence, but they all disappeared in eight days.

[1] Bulletin de la Société de Pharmacie de Bordeaux, November, 1901, page 331.

THE URINE OF NURSLINGS.

M. E. Lesné and M. P. Merklen[2] have examined the urine of healthy nurslings and of those suffering from gastro-enteritis. They point out that the urine of the latter resembles normal urine in colour, in density, and in quantity; its composition approaches the normal, and there are other points of resemblance. When, however, the attack of gastro-enteritis is severe certain modifications are observed. Thus the quantity passed is less, as also is the quantity of urea, chlorides, and of certain other normal constituents, while certain salts may increase in quantity and pathological constituents—e.g., albumin and indican—may make their appearance; the urine also has a higher density.

DYMAL: A NEW ANTISEPTIC POWDER.

This substance, dymal,[3] on account of its cheapness, provided that clinical reports continue to be favourable, should prove of service in cutaneous affections where large quantities of medicaments are required. Dymal is an odourless impalpable powder; it may be used in the dry state or in the form of a 10 per cent. ointment, or as a local absorbent and antiseptic. It has been found useful for burns, ulcers, and running eczema; in scaly eczema and in psoriasis its action is but little marked. In intertrigo dymal exercises a soothing and drying action. In ichthyosis an ointment with a wool-fat basis is recommended because of its prompt action on the itching surface. Ulcers of the leg and cutaneous gangrene lose their repulsive appearance and characteristic odour under the influence of this powder.

THE VALUE OF LECITHINS AND NUCLEINS.

Dr. J. Laumonier[4] summarises at some length our present knowledge of the lecithins and nucleins. With regard to the lecithins he considers them to be stimulating to the general nutrition, principally on account of the phosphorus which they contain and by the action which they have on the nervous system. However, in their effect the isolated lecithins, of which the principal ingredient is glycerophosphoric acid, do not seem to be superior to the glycerophosphates or even to cod-liver oil. Considering that this oil contains organic bases and phosphates, besides possessing tonic and stimulating properties, it appears to be superior to the costly lecithin. But if lecithin be considered to occur in the yelk of egg, then it is necessary to study the nucleins which accompany it and assist its action. Dr. Laumonier discusses the discovery, constitution, sources, classification, and other points connected with the nucleins, and draws the conclusion that insufficient clinical observations have been made to warrant any definite statement regarding their value as remedial agents.

[2] Les Nouveaux Remèdes de Pharmacologie, Dec. 8th, 1901, p. 538.
[3] Ibid., p. 552.
[4] Ibid., Dec. 8th and 24th, 1901, pp. 529 and 553.

THE LONDON WATER BILL.

THE Government measure introduced by Mr. Long is entitled, "A Bill for Establishing a Water Board to Manage the Supply of Water within London and Certain Adjoining Districts, for Transferring to the Water Board the Undertakings of the Metropolitan Water Companies, and for other Purposes connected therewith." The Bill was prepared and brought in by Mr. Long, Mr. Ritchie, the Attorney-General, and Mr. Grant Lawson. It consists of 40 clauses and six schedules which occupy together 28 pages. The first clause deals with the establishment of the Water Board, its composition and chief duties. The Board is to be established for the purpose of acquiring by purchase and of managing and carrying on the undertakings of the metropolitan water companies, and to undertake the duties of supplying water within an area which will be defined,

but which will not necessarily be the area at present denominated "Water London." The Water Board is to be "a body corporate with a common seal" and will have power to acquire and to hold land. The Board is to consist of a chairman and vice-chairman and 67 members; the chairman and vice-chairman are to be appointed by the Board and will receive such salaries as the Board may determine. The constitution and proceedings of the Board are set forth at length in one of the schedules (Schedule 4, p. 24). They are necessarily of a complicated nature, and it would be useless to attempt to give a summary of them.

The arrangements for the transfer to the Water Board of the undertakings of the companies is provided for in the Bill in Clauses 2 to 8. Payment for the property of the companies is to be made in a newly created security to be called "water stock." On taking over the businesses of the companies the Board will exercise "all the rights, powers, and privileges of the companies" and will be subject to "all the duties, obligations, and liabilities" of the companies under all the Acts, "whether local or general," which at present affect them. After the issue of the water stock to the companies in payment for their properties the Chamberlain of the City of London will be under the obligation to deliver to the Water Board the stock at present held by him (under what are generally known as the sinking fund clauses of the companies' Acts). The stock so delivered will be cancelled and extinguished. Provisions are made for the exclusion of certain districts (now in Water London) from the government of the Board and for the supply in bulk of certain districts and persons.

Provisions for the redemption of the present debenture stock of the companies are made in Clauses 9 and 10.

The financial arrangements of the Board are dealt with in Clauses 11 to 17 inclusive. A "water fund" is to be established and all payments by the Board are to be made from that fund. Should there be a deficiency in the "water fund" any sum required to meet this is to be made good by the City of London and the parishes in the county of London and in the boroughs and urban districts outside London the councils of which are for the time being entitled to be represented on the Water Board in proportion to the rateable value appearing in the valuation lists. The amount of money so required is to be raised (1) in the case of the City from the consolidated rate; (2) in the case of a parish in a metropolitan borough from the general rate; and (3) in any other parish from the poor-rate.

Provisions are made for the Water Board as to the terms on which money may be borrowed, as to the issue of water stock (which is to bear interest at the rate of 3 per cent. per annum), and as to the way in which loans are to be discharged (the essential feature being that the water stock issued in payment for the companies' undertakings must be redeemed within a period of 80 years). The accounts of the Water Board are to be subject to public audit and ratepayers are to have the right to make objection to and, if they shall think fit, to appeal against them.

For the purpose of arbitration a special court is appointed. It consists of the Right Hon. Sir Edward Fry, Sir Hugh Owen, G.C.B., and Sir John Wolfe Barry, K.C.B. Provisions are made as to the rules to be observed by the arbitrators.

Clauses 19 to 28, which are grouped together as "Miscellaneous," deal with the subsidiary powers of the Water Board, the power of the Local Government Board to make provisional orders for certain purposes, provisions as to local inquiries, the publication by the Board of an annual report (which is to be laid before Parliament by the Local Government Board), and the "dissolution of water companies" (the New River Company alone is to survive, presumably as a land company, for it has great possessions). Provisions are made also as to "qualification of justices" (whose capacity to act will not be interfered with because they hold water stock) and local authorities are to be allowed to be heard against any Bill promoted by the Water Board (a privilege which should not be distasteful to the Parliamentary Bar).

Clauses 29–40 inclusive relate to "transitory provisions" for the maintenance of the undertakings of the water companies until (Clause 29) and after (Clause 30) the day appointed for their transfer to the Board. Clause 31 provides that anyone authorised by the Water Board "shall have free access to the works of any metropolitan water company for the purpose of inspecting those works." The remaining clauses deal with the payment of dividends to companies till the issue of water stock, with temporary advances (to meet the immediate necessities of the Water Board on its formation), with existing contracts and existing by-laws, with the treatment of the present officers and servants of the water companies, and with the compensation to be given to the auditor of the companies' accounts. There are transitory provisions as to the supply of water in bulk, and power is given to the Local Government Board to remove some minor difficulties which may arise. The last section of the Act provides that "all costs, charges, and expenses preliminary to and of and incidental to the preparing, applying for, obtaining, and passing of the Act incurred by the Local Government Board shall be repaid to that Board by the Water Board when established under this Act."

"TACHIOL," A NEW ANTISEPTIC.

A NEW antiseptic, which seems likely to take a high place among those at present in use, was the subject of a communication made to the Royal Medical Academy of Rome on Jan. 26th by Professor Durante, to whose notice it was brought by Paternò, Professor of Pharmaceutical Chemistry in the University of Rome, who by experiments on bacterial cultures had already noted its great germicidal power. This new antiseptic agent is the fluoride of silver and has been christened "tachiol." Dr. Perez, one of Durante's assistants, is now engaged in making a complete investigation of its properties, a full account of which is promised shortly. Meanwhile the results already obtained are interesting and promising. The object aimed at in the inquiry has been threefold—namely, (1) to establish the germicidal effects of the preparation; (2) to ascertain its toxic power; and (3) to determine its possible therapeutic applications. In regard to its bactericidal properties, it appears certain that in solution of 1 in 150,000 it kills in the space of one minute the most resistant pyogenic organisms, such as the staphylococcus pyogenes aureus. A solution of 1 in 200,000 was found sufficient to kill in one minute the typhoid bacillus. With the spores of the anthrax bacillus the result varied, probably owing to the different degrees of resistance in these spores, but a solution of 1 in 1000 sufficed in from 20 to 30 minutes to kill completely spores obtained at a temperature of 18° C., which resisted steam for 15 minutes. In all cases, however, by contact with such a solution for the space of one minute, a large proportion of the spores lost their power of development. Compared, therefore, with other antiseptics, such as sublimate, and carbolic acid and its derivatives, tachiol takes a foremost place as a germicide, especially when in contact with albuminoid bodies under which condition sublimate loses much of its bactericidal power. The toxic power of tachiol, on the other hand, is much feebler than that of other antiseptics, a fact which constitutes one of the chief advantages of the new preparation. Injected into guinea-pigs and rabbits no ill-effects are observed until the quantity exceeds one centigramme per 100 grammes of the animal's weight. Larger doses are poisonous. As to the therapeutic uses of the antiseptic, this was tested on a large scale in different surgical affections either by disinfecting cavities or suppurating sinuses, or by endoarticular injection in tuberculous synovitis, or by treating various cases of endometritis, proctitis, and cystitis. Solutions varying in strength from 1 in 1000 to as much as 1 in 100 were employed for most of these; in cystitis and endometritis solutions of 1 in 5000 or 1 in 10,000 were used. In all cases the injection was well tolerated and no ill-effects were produced. The suppurative process was arrested in a relatively short time and an examination of the cultures made after the first application demonstrated an almost complete disappearance of the germs. Indolent ulcers were stimulated and the process of cicatrisation was hastened to a notable degree. In some cases of tuberculous disease with formation of fistulous sinuses gradual healing and complete obliteration occurred; in others associated with suppuration the discharge lost its purulent character and a remarkable improvement took place in the local conditions, although, up to the present time at least, the tuberculous foci have not been entirely destroyed. In cases of tuberculous synovitis with lesions of bone the results were not so marked, probably because the action of the salt is chiefly local and requires actual contact in order to be fully exercised. Absorption does,

however, take place and the action extends to a certain, though as yet undetermined, distance through the tissues. But perhaps the most important application of tachiol in these experiments was made to determine its action in certain septicæmias, especially in anthrax septicæmia. The results were most remarkable. Of seven rabbits inoculated in the subcutaneous cellular tissue with virulent anthrax and either immediately after or within one, three, six, 12, 24, or 30 hours injected hypodermically with a solution of 10 centigrammes per 1000 grammes of weight, only those injected after 24 and 30 hours had any anthrax bacilli in their blood, and none of them showed any symptom beyond a local and transitory œdema. Three rabbits inoculated as controls with the same culture of anthrax died within 48 hours. It was also found that the substance could be safely injected into the veins, but in quantities not exceeding from four to five grammes at a time. More than this produced embolic phenomena, although by means of fractional injections of from one to three grammes extended over from three to four days as much as 10 centigrammes per 1000 grammes of animal could be thus introduced with impunity. Doubtless much experience of the new antiseptic will be required before it can be safely affirmed that it is an efficient remedy in septicæmia, but enough has been seen of its action to warrant the hope that in tachiol we possess a substance of an unirritating and but slightly toxic nature and of very high germicidal power.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary meeting of the Comitia was held on Jan. 30th, Sir WILLIAM SELBY CHURCH, Bart., the President, being in the chair.

The PRESIDENT announced that His Majesty the King had graciously consented to continue to be an honorary Fellow of the College.

The SENIOR CENSOR (Dr. T. T. WHIPHAM) proposed, and the TREASURER (Sir DYCE DUCKWORTH) seconded, the following motion, which was unanimously carried and ordered to be forwarded to the proper quarter:—

The President and Fellows of the Royal College of Physicians of London are deeply sensible of the great honour which the King has been pleased to confer on them by graciously consenting to remain an honorary Fellow of their body. They desire to assure His Majesty of their devoted loyalty to his Throne and Person and to beg His Majesty's acceptance of this expression of their gratitude and dutiful allegiance.

The PRESIDENT announced that he had appointed Dr. D. Ferrier Harveian Orator, and Dr. C. J. Cullingworth Bradshaw Lecturer for the year, and that the Council had appointed Dr. H. T. Bulstrode Milroy Lecturer for 1903.

The following gentlemen having passed the required examination were admitted Members of the College: Arthur Stanley Barnes, M.B., L.R.C.P. Lond.; John Charlton Briscoe, M.B., L.R.C.P. Lond.; Arthur Edmund Carver, M.B., B.A. Cantab., L.R.C.P. Lond.; Otto Fritz Frankau Grünbaum, M.A., M.B. Cantab.; Richard Crawshaw Holt, M.D. Durh.; Charles Hunter, M.A., M.B. Aberd.; William McCallin, M.D. R.U.I.; Sheffield Henry Morier Neave, L.R.C.P. Lond.; and Charles Gabriel Seligmann, M.B., L.R.C.P. Lond.

Licences to practise physic were granted to 118 gentlemen, and diplomas in public health (conjointly with the Royal College of Surgeons of England) to 26 gentlemen.

The College seal was set to a "Declaration of trust" settling the foundation of the FitzPatrick Endowed Lectureship.

The following communications were received:—

1. From the President of the proposed Egyptian Medical Congress of December, 1902, inviting the President of the College to accept the honorary presidency of the Congress.—The PRESIDENT stated that he had accepted the office.

2. From the Owens College, Manchester, inviting the Royal College of Physicians of London to send a representative to be the guest of the College at the celebration of the jubilee of its foundation, March 12th and 13th, 1902.—The PRESIDENT, at the request of the College, consented to represent the College.

3. From the Queen Victoria's Jubilee Institute for Nurses asking the College to appoint a representative on the Council.—Sir Dyce Duckworth was re-elected.

4. From Lady Priestley offering for the acceptance of the College a portrait of the late Sir William O. Priestley, M.D. Edin., F.R.C.P. Lond.—The PRESIDENT, in accepting the gift, proposed that the grateful thanks of the College be accorded to Lady Priestley.—The motion was adopted.

5. From Mr. Thomas Wakley, jun., L.R.C.P. Lond., offering for the acceptance of the College two medals impressed with the head of Sir William Browne, a former President of the College (1765).—Dr. J. F. PAYNE explained the origin of the medals and proposed that the cordial thanks of the College be given to Mr. Wakley for the gift.—This was seconded by the TREASURER and was carried with acclamation.

6. From the Dean of the Medical Faculty, University of Edinburgh, reporting the award of the Charles Murchison scholarship in July last to Robert Veitch Clark, M.A. Edin.

7. From Mr. Cowell reporting the proceedings of the Council of the Royal College of Surgeons of England.

Dr. S. J. Gee, Sir R. Douglas Powell, Dr. F. H. Champneys, and Dr. S. J. Sharkey were elected councillors.

A report was received from the representative of the College in the General Medical Council on the proceedings of the Council affecting the College at the November session.

94, Gloucester-place, Portman-square, W., Jan. 20th, 1902.

DEAR DR. LIVEING,—I have to report for the information of the College that at the meeting of the General Council of Medical Education and Registration in November and December, 1901, it was resolved on the motion of Dr. McVail:—

"That a committee be appointed to prepare a report on the differences that exist between certain licensing bodies on the one hand, and the General Medical Council on the other, regarding the courses and conditions of study, and the recognition of the institutions and schools in which the required courses may be taken; and that the report be considered by the Medical Council at a special meeting when the Council will decide what action, if any, shall be taken, and in particular whether the circumstances are such as to require action to be taken under Section 20 of the Act of 1858."

I was nominated to serve on this committee with the representative of the Royal College of Surgeons of England. A considerable minority voted against this resolution. Section XX. of the Medical Act of 1858 is: "In case it appear to the General Council that the course of study and examinations to be gone through in order to obtain any such qualification from any such College or body are not such as to secure the possession by persons obtaining such qualification of the requisite knowledge and skill for the efficient practice of their profession, it shall be lawful for such General Council to represent the same to Her Majesty's most honourable Privy Council."

On Dec. 3rd, 1901, when the list of scientific institutions, study at which will be recognised by the Council as entitling a medical student (who has complied with the other conditions) to place his name on the Register, came before the Council I moved as an amendment:—

"That the list of scientific institutions, other than universities or schools of medicine, do consist of the teaching institutions where physics, chemistry, and elementary biology are taught, recognised by each licensing body, as stated in the list forwarded each year, provided that the list in each case be accompanied by the statement that after due inspection the licensing body is satisfied that each institution so recognised possesses sufficient laboratory accommodation and appliances for the efficient teaching of the required subjects."

The amendment was seconded by the representative of the Royal College of Surgeons of England, but was not carried. Had the amendment been carried it might have afforded the General Council a means of completing its Register of medical students, a matter to which importance is attached by some members of the Council, but which no longer directly affects the regulations for our Licence. In view of the difficulties into which an attempt to assume powers which do not belong to it has led the General Council it seemed right to take this conciliatory step.

These were the only proceedings directly or indirectly affecting our College. The special meeting of the General Council is to be held at the end of February, 1902.

I remain, dear Dr. Liveing, yours faithfully,
NORMAN MOORE.

The quarterly report of the Financial Committee of the College was received and adopted.

A report was received and adopted from the Committee of Management dated Dec. 6th last. This report dealt with three subjects. 1. The teaching of the administration of anæsthetics to candidates for the diploma of L.R.C.P. and M.R.C.S. The following now stands as the regulation dealing with the subject:—

That every candidate who passes the Second Examination of this Board, or an examination at a university recognised in lieu of it, on or after May 1st next be required to produce before entering for the Final Examination a certificate of having received at a recognised medical school and hospital instruction in the administration of anæsthetics to the satisfaction of his teachers.

2. The committee also recommend that the North-Western University, Chicago, should be added to the list of universities recognised by the Board at which students might complete the curriculum of professional study and the graduates of which in medicine, on fulfilment of the necessary conditions, might be admitted to the final examination. 3. The fees for the diploma in public health. The committee recommended

that the fee of five guineas should be increased to six guineas and should be paid on each occasion of admission to Parts I. and II. of the examination.

After some further formal business the PRESIDENT dissolved the Comitia.

THE ARMY MEDICAL SCHOOL, NETLEY.

DISTRIBUTION OF PRIZES.

IN the lecture hall of the Army Medical School, Netley, on Jan. 31st, the result of the examination lately held at the school was promulgated, and the prizes were distributed by Surgeon-General W. Taylor, C.B. (Director-General of the Army Medical Service), in the presence of Colonel W. J. Charlton (Principal Medical Officer at Netley), Lieutenant-Colonel G. Wilson, Colonel K. Macleod (Professor of Military Medicine), Colonel W. F. Stevenson, C.B. (Professor of Military Surgery), Dr. A. E. Wright (Professor of Pathology), Colonel H. Cayley, C.M.G., I.M.S., Lieutenant-Colonel W. E. Webb, Major W. Dick, and the military staff of the Royal Victoria Hospital.

Colonel MACLEOD read a report which stated that the work of the session had been most satisfactory. Out of the 27 surgeons-on-probation who had undergone the final examination 26 had proved themselves fitted to receive His Majesty's commission. 23 surgeons-on-probation of the Indian Medical Service had passed an examination in company and stretcher drill and had received certificates to that effect. They had given evidence of punctuality, diligence, and capacity in the pursuit of their studies, and their conduct while passing through the school had been excellent, and there had been a good tone throughout the school. The Herbert prize, consisting of about £20, given in memory of the late Right Hon. Sidney Herbert, who was President of the Royal Commission which resulted in the foundation of the Army Medical School, and which was awarded at the end of each course of instruction to the surgeon-on-probation who had evinced the highest proficiency in the special subjects taught at the Army Medical School, was awarded to T. S. B. Williams, I.M.S. The Martin gold medal, which was given to the surgeon-on-probation who took the highest place in military medicine and was intended to commemorate the late Sir Ranald Martin, was awarded to E. Bissett, I.M.S. The Professor of Medicine desired to call attention to the names of Surgeons-on-probation H. B. Steen, A. E. J. Lister, and A. W. Greig, all of the Indian Medical Service, as having particularly distinguished themselves throughout the examinations in military and tropical medicine. The Parkes memorial bronze medal, given to the surgeon-on-probation who took the highest place in hygiene, and which formed part of a memorial to commemorate the great services of the late Professor E. A. Parkes, had been won by A. E. J. Lister, I.M.S. The second prize in hygiene, a book presented by Mrs. De Chaumont in memory of her husband, the late Professor F. De Chaumont, F.R.S., was awarded to T. S. B. Williams, I.M.S., who gained the second place in this department of study. The Professor of Hygiene desired to make mention of Surgeon-on-probation R. J. Bradley, who had also particularly distinguished himself in military hygiene. The Montefiore prizes, two in number, which were founded by Mr. Nathaniel Montefiore, were awarded to Surgeons-on-probation E. A. Loch and A. W. Overbeck-Wright, both of the Indian Medical Service. The first prize consisted of a medal with a cheque for £21, and the second of seven guineas. The Professor of Military Surgery desired that the names of the following gentlemen should be honourably mentioned in his department of study:—J. E. Clements, R. E. Lloyd, and T. S. B. Williams, all of the Indian Medical Service. The prizes in pathology, which consisted of books and an oil immersion lens, presented on this occasion by Professor Wright, were awarded to Surgeons-on-probation T. S. B. Williams and A. W. Overbeck-Wright, both of the Indian Medical Service, while the name of A. W. Greig, I.M.S., was worthy of special mention as a pathologist. The prize-books for clinical and ward work, presented in memory of Surgeon-General Maclean, for many years professor of military medicine, were awarded to A. E. J. Lister, I.M.S. The prize for hospital administration, consisting of a bronze medal and £5, which had been established by Mrs. Marshall Webb in memory of her husband, the late Surgeon-Major-General W. M. Webb, who once held the office of Assistant Professor of Military Medicine in the school, had been awarded to S. H. L. Abbott, I.M.S. From a report issued by Lieutenant-Colonel W. E. Webb, it appeared that the results of the examination on this subject which had been held as a separate one for the first time, and to which all the surgeons-on-probation were subjected, had been on the whole very satisfactory.

Surgeon-General TAYLOR, having distributed the prizes, addressed the young officers who had been awarded His Majesty's commission, expressing the pleasure which it gave him to be present on such an interesting occasion, because the Royal Victoria Hospital at Netley was associated with many of his happiest days. He should like to take the opportunity of thanking Mrs. Webb for the prize which she had given in memory of her late husband, whom he remembered as a distinguished officer and gentleman, respected wherever he went. Speaking to those who had been students there recently he would remind them that they had hard work before them and their lives were in front of them. Perhaps before he proceeded further he might try to allay a little anxiety which existed in the minds of some of the officers of the school. There seemed to be an idea abroad that their death-warrant had been sounded, but that, he thought, only existed in the air. The man in the street knew it, but they did not know it at headquarters, and if there should be any change it would only be one of translation. Let them hope and believe that the translation would be for the improvement of the service so that it might soar to a higher sphere. Addressing the Indian medical officers he said he was in a position to do so, though he had not the honour to belong to their service, for he had served in the country in which they had chosen to spend their lives. It was a difficult thing to choose a career, but he congratulated them on their choice. The records of their service were far beyond dispute, and they had had in their service men who were historical and whose names would go down to posterity, not only as belonging to their profession, but as pioneers of civilisation who had done more for the welding together of their great Indian Empire than the men of almost any other service. It would be invidious to mention names, but they were all historical, and they could find them for themselves now that they were starting in their career. There was one great principle which he should like to impress upon them with all the power and force he could command, and it was that they had still a lot to learn from the time they first stepped on board the ship that was to take them out to India, and they should keep on learning until their last voyage home. They would find themselves in a land that was new to them, and there they would again have a lot to learn. They should store up knowledge for future use and should remember that to stand still was dangerous. He sometimes heard it said that both the Indian Medical Service and the Army Medical Service, to which he had the honour to belong, were not considered careers fit for men anxious to get on in their profession. That was all nonsense, absolute nonsense, because in the smallest station they could go to in India—it might be 500 miles from anywhere—they might obtain more surgical experience and practice than elsewhere, and it was not opportunities that would be wanted but capacity to take advantage of them. He urged them not to forget in their careers that they were professional men and that they should be kind, cheerful, and sympathetic with their patients. He wished them all a most successful career in the field to which they were going, and hoped that they would do well and come back to their own country to spend the later days of their lives with the full knowledge that they had done their duty with all their might.

Colonel CHARLTON also addressed those who had received commissions, trusting that they would never regret the day that they joined the Royal Army Medical Corps or the Indian Medical Service. He also expressed regret and sorrow at the loss they had sustained by the death of Surgeon-General R. Harvey, late Director-General of the Indian Medical Service, who came there on the occasion of the last distribution of prizes. He had the privilege of serving under him and never met a kinder, more courteous, or abler medical man; he was thoroughly well-cultured and distinguished in his profession and just as successful as an administrator. They should all try to profit by the bright example of those who preceded them and to maintain at all times the honour of their service.

The company was afterwards entertained at luncheon by

the officers of the Royal Army Medical Corps in their fine mess-room.

The following list shows the positions of the officers who obtained commissions:—

INDIAN MEDICAL SERVICE.

List of surgeons-on-probation who were successful at both the London and Netley examinations. The prizes are awarded for marks gained in the special subjects taught at the Army Medical School. The final positions of these gentlemen are determined by the marks gained in London added to those gained at Netley, and the combined numbers are accordingly shown in the list which follows:—

JANUARY 31ST, 1902.

	Marks.		Marks.
*1. A. E. J. Lister	5881	‡‡13. E. A. Loch	5033
††2. T. S. B. Williams ...	5860	14. T. W. Harley	4809
‡3. S. H. L. Abbott	5674	15. J. W. McCoy	4631
4. A. W. Greig	5519	16. R. L. Hagger	4566
5. R. E. Lloyd	5422	17. R. M. Carter	4531
6. J. E. Clements	5409	18. R. D. Willcocks	4513
7. H. B. Steen	5330	19. T. G. F. Paterson ...	4379
**8. E. Bisset	5322	20. D. G. R. S. Baker ...	4358
9. R. J. Bradley	5241	21. J. R. J. Tyrrell	4259
10. J. Woods	5239	22. D. G. Ral	4091
††11. A. W. Overbeck-Wright	5160	23. R. M. Barron	4036
12. D. Munro	5063	24. W. R. J. Scroggie ...	3833
		25. L. P. Farrell	3817

ROYAL ARMY MEDICAL CORPS.

B. A. Craig.

* Gained the Parkes Memorial Medal and the Maclean Prize for Clinical and Ward work.

† Gained the Herbert Prize, the Prize in Pathology presented by Professor Wright, and the De Chaumont Prize in Hygiene.

‡ Gained the Marshall Webb Prize of £5 and Medal.

** Gained the Martin Memorial Medal.

†† Gained the Second Montefiore Prize of £7 7s., and the Prize in Pathology.

‡‡ Gained the First Montefiore Prize of £21 and Medal.

STATISTICAL REPORT OF THE HEALTH OF THE NAVY FOR 1900.[1]

WE may congratulate Sir Henry F. Norbury, K.C.B., the Director-General of the Medical Department of the Royal Navy, on the preparation and issue of an unusually good and interesting report concerning the health of the navy and the work done by the officers of his department. To the general reader Parliamentary publications, and especially those dealing with statistics, cannot at best be regarded as an enticing form of literature, however interesting they may prove to statisticians or however necessary they may be for the information of the two Houses of Parliament. While every complaint to which the seamen of the Royal Navy are liable is, for statistical purposes, recorded in this report, there is besides a good deal which is well worth reading to be found in the numerous papers published in the appendix, and it is to these rather than to the figures and ratios which form one of the most prominent features of the report itself that our readers will probably turn.

To begin with the general aspect of the health of the navy from a statistical point of view we gather from the introductory summary of results that after making allowance for exceptional conditions on the Cape of Good Hope, the West Coast of Africa, and the China stations, the health returns for the total force serving afloat may be regarded as satisfactory. To touch upon some of the points we may say that the death-rate per 1000 was 7·27, showing an increase of 1·86 per 1000 as compared with the previous year, and of 2·09 in comparison with the ratio of the last three years. The stations which exhibit the highest death-rates are the Cape of Good Hope and West Coast of Africa (20·03), China (17·34), and the East Indies (13·92). The lowest mortality was on the North America and the West Indies station—viz., 3·59. 378 cases of wounds in action are recorded. Of these, 18 cases with five deaths occurred in South Africa, and 360 cases with 69 fatalities in China. These two stations are responsible for a large increase in the number of cases of enteric fever and dysentery, the deaths from which diseases in the total force numbered respectively 124 and 27, as compared with 41 and 12 in 1899.

The total force serving afloat in 1900 was 95,830. The total number of cases of disease and injury entered on the sick list was 84,550, which is in the ratio of 882·29 per 1000—an increase as compared with the previous years but a decrease of 11·22 per 1000 as compared with the average ratio of the last three years. There is a reduction in the ratio of cases as compared with 1899 on the Home, the Pacific, the Cape of Good Hope, and the West Coast of Africa and the Australia stations, but an increase in the remaining stations. The lowest sick-rate was on the South-East Coast of America station and the highest on the China station.

The invaliding ratio of the total force is 35·83 per 1000, which shows a considerable increase, the highest rate being on the China station (54·52 per 1000). The total number of men invalided was 3434, of whom 3124 were for disease and 310 for injury. The ratio of invaliding for disease alone was 32·59 per 1000 and for injury 3·23 per 1000. A new table has been added this year (page 16) showing the disease or injury together with the age and length of service of the persons finally invalided from the service. The death ratio per 1000 was, as we have said, 7·27, of which 4·96 were from diseases.

As regards general diseases we may mention that there were 464 entries for enteric fever with 98 invalidings and 124 deaths, attributable in great part to the prevalence of this disease in those places where warlike operations were in progress—China, South Africa, and the West Coast of Africa. There were 13 cases of small-pox altogether (one of which was fatal). Five out of six cases of cerebro-spinal fever—all on the Home station—terminated fatally. Mediterranean fever gave an increased number of cases as compared with 1899. Under the head of "dysentery" there were 420 cases returned with 79 invalidings and 27 deaths—the increased incidence of the disease being due to the same causes that augmented the totals of enteric fever—viz., military operations in South Africa and China.

The statistical information grouped in the section "Hospitals" (page 19, *et seq.*) is interesting as illustrative of the nature and results of the diseases and injuries treated in naval hospital practice; and the notes and remarks on the different stations (pp. 28 to 65) may be referred to as containing many interesting and instructive observations—especially those on the Mediterranean, the Cape of Good Hope, the West Coast of Africa, and the China stations.

The Appendix to the report strikes us as a whole as being unusually good, several of the papers in particular being excellent and containing information of a practical and scientific character which it will well repay medical officers of our public services to read. We had marked many passages in some of these papers for reference and remark, but we must content ourselves by simply expressing our opinion in regard to them and to the report and its appendix as a whole. To those of our readers who are interested in matters of naval and military medicine, hygiene, climatology, and medical experiences in modern warfare we would commend such papers as "Some Observations on Recruiting," by Fleet Surgeon E. H. Williams; "Malarial Fever on the Zambesi and Shiré Rivers," by Surgeon R. T. Gilmour; "Medical Notes of the Western Naval Brigade—South Africa, 1899–1900," by Deputy Inspector-General James Porter, R.N.; "The Naval Brigade in North China," by Staff Surgeon Edward B. Pickthorn; and the paper on a "Case of Death from Syncope Caused by Caisson Disease," by Fleet Surgeon Archibald McKinlay. The reports by Deputy Inspector-General Porter and Staff Surgeon Pickthorn are full of interesting descriptions and instructive medical details.

[1] Statistical Report of the Health of the Navy for the Year 1900. (Presented by His Majesty's command.) Ordered by the House of Commons to be printed, August 8th, 1901. London: Printed for His Majesty's Stationery Office by Eyre and Spottiswoode, Printers to the King's Most Excellent Majesty. Price 1s. 1d.

SPIRITUALISM AND HALLUCINATIONS.

SIR LAUDER BRUNTON, in the course of a fascinating address delivered before the British Association of Nurses at Orchard-street, London, W., on Jan. 21st, stated his belief that an explanation of the action of one mind upon another when two persons are sundered by a considerable distance can be looked for in the direction of "brain waves passing from one to the other in some sort the same way as Marconi

has shown that telegraphic messages may be transmitted without the use of wires." A very interesting portion of Sir Lauder Brunton's address referred to the prophet Mahomet, and he invited his hearers to speculate on the question how far the history of the world would have been altered if the prophet had undergone a course of treatment of bromide of potassium. The prophet was described as being subject to attacks in which he fell to the ground foaming at the mouth and bellowing like a bull and he had related himself how he saw sudden visions of light and heard voices. According to Sir Lauder Brunton it was during these epileptic conditions that Mahomet received the utterances which he afterwards wrote partly on skins and partly on sheep's blade-bones from which was formed the Koran. Passing on to discuss the question of Samson's strength, Sir Lauder Brunton took the opportunity of observing that his remarks were in no way intended to ridicule Holy Writ. In his opinion Samson was really an epileptic, and in this connexion he described how he had been shown at an asylum a slight, weakly-looking man, who in a fit of epileptic mania had driven his fist through a two-inch oaken door. Touching the remarkable passage, "Samson said, I will go out and shake myself," it was possible that a parallel might be traced in the preliminary contortions and swayings performed by the howling Dervishes, and Sir Lauder Brunton reminded his audience that the Berserkers could bring themselves into such a state of fury that when they went into battle they required no armour.

ASYLUM REPORTS.

Lanark and Govan District Asylum, Kirklands (Report for the year ending April, 1901).—The average number of patients resident during the year was 179, including 90 males and 89 females. The admissions during the year amounted to 107, and of these 61 were males and 46 were females. Of these 102 were first admissions. Dr. James H. Skeen, the medical superintendent, states in his report that the admissions for the year numbered more than for any year since 1888. "The admissions continue to show a large proportion of cases broken down in health from various and severe forms of bodily ailment. A large number of the cases admitted were manifestly beyond hope of cure. ..... 53 of the total [admissions] were of this hopeless class." There was an increase in the number of cases admitted whose insanity was due to alcoholism, either primarily or in conjunction with other causes. Alcoholism thus considered was responsible for 25·7 per cent. of the cases admitted. If the effects of alcoholism in producing weakened offspring were taken into account the damage done by alcoholism would probably have to be regarded as higher. The number of patients discharged as recovered during the year amounted to 23, or 12·8 per cent. of the average number resident. Most of these recoveries have been good, and such discharged patients ought, says Dr. Skeen, to do well in the world if assisted by friends. "Our Poor-law authorities do excellent work in helping on such cases ..... but it is seldom such persons care to call again upon an inspector of poor. Is there not work here for some society to help such cases? Discharged prisoners have their future looked after and their life ordered for them if they care. Why not our discharged recovered asylum patients?" Of those discharged unrecovered the largest proportion—viz., 58—was transferred to other asylums. The deaths during the year amounted to 16—viz., seven males and nine females, or 8·9 per cent. of the average number resident. Of the deaths one was due to accidental choking, one to phthisis, one to senile decay, two each to epilepsy, cerebral hæmorrhage, and cerebral softening, three to cardiac disease, and the rest to other causes. Two patients escaped during the year, one being a female patient who broke parole. The health of the institution has on the whole been good. In concluding his report Dr. Skeen refers to the increase in the maintenance rate. Clothing and food stuffs have risen in price and the increased cost of fuel was another cause of the increase. The Commissioner in Lunacy states in his report that the patients were found to be neatly dressed and efficiently cared for. There was a general absence of excitement among the patients and an air of contentment prevailed. The condition of the dormitories and bedding was very satisfactory. The medical case-books and registers were examined and found to be regularly and accurately kept. The committee of management states in its report that a separate wash-house and laundry are being erected at a cost of between £1600 and £1700. For the first half of the year the rate of board of district patients was fixed at 9*s.* per week, but for the rest of the year it was raised to 9*s.* 6*d.* per patient per week. The weekly charge for out-district patients was fixed at 12*s.* 4*d.* per head.

Lanark District Asylum, Hartwood (Report for the year ending May 15th, 1901).—The average number of patients resident during the year was 690 and comprised 365 males and 325 females. The admissions during the year amounted to 205—viz., 107 males and 98 males. Of these 147 were first admissions. Dr. A. Campbell Clark, the medical superintendent, states in his report that among the admissions were 27 patients over the age of 60 years. The number of patients discharged as recovered during the year was 101—viz., 55 males and 46 females, or 14·6 per cent. of the average number resident. The deaths during the year amounted to 47—viz., 28 males and 19 females, or 6·8 per cent. as calculated on the same basis. Of the deaths one was due to shock and collapse from burns, one to fracture of the skull and cerebral concussion, three were due to cerebral and cerebellar hæmorrhage, six to general paralysis of the insane, seven to phthisis and other forms of tuberculosis, nine to cardiac disease with complications, and the rest to other causes. The number of accidents during the year was eight, but of these only two were serious. One patient escaped during the year and could not be re-captured. "The industrial employment of the patients still continues to receive considerable attention, and on an average 72 per cent. of the males and 68 per cent. of the females were industrially employed daily. Of the males 52 per cent. were engaged in garden and field labour." The Commissioner in Lunacy states in his report that every part of the institution was clean and in excellent order both on the male and female sides, the day rooms were bright and most comfortably furnished the warming of the building was even and excellent, and the medical case-books and registers were carefully and correctly kept. The board of management states in its report that the weekly charge of maintenance for district pauper patients had been kept at 8*s.* 9*d.* per head, notwithstanding the considerable rise in the price of commodities.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8238 births and 5115 deaths were registered during the week ending Feb. 1st. The annual rate of mortality in these towns, which had been 18·2, 17·7, and 17·7 per 1000 in the three preceding weeks, rose again last week to 17·9 per 1000. In London the death-rate was 18·8 per 1000, while it averaged 17·6 in the 75 other large towns. The lowest death-rates in these towns were 7·2 in York, 9·2 in Burton-upon-Trent, 9·3 in Wallasey, 9·7 in Hornsey, 9·8 in Walthamstow and in Barrow-in-Furness, and 10·2 in Birkenhead; the highest rates were 23·6 in Halifax, 24·3 in St. Helens, 25·0 in Rhondda, 25·9 in Merthyr Tydfil, 26·1 in Ipswich, 26·5 in Newport (Mon.), and 30·3 in Great Yarmouth. The 5115 deaths in these towns last week included 444 which were referred to the principal zymotic diseases, against 534 and 512 in the two preceding weeks; of these 101 resulted from whooping-cough, 85 from measles, 85 from diphtheria, 60 from scarlet fever, 43 from small-pox, 39 from diarrhœa, and 31 from "fever" (principally enteric). No death from any of these diseases was registered last week in 14 of the large towns, including Hornsey, Walthamstow, Southampton, Norwich, Derby, York, and eight other smaller towns; the highest zymotic death-rates were recorded in Willesden, East Ham, West Bromwich, St. Helens, Middlesbrough, Stockton-on-Tees, West Hartlepool, and Merthyr Tydfil. The greatest proportional mortality from measles occurred in Northampton and in St. Helens; from scarlet fever in Newcastle and in South Shields; from diphtheria in Willesden, East Ham, West Hartlepool, Cardiff, and Merthyr Tydfil; from whooping-cough in Aston Manor, Leicester, Liverpool, and West Hartlepool; from "fever" in St. Helens; and from diarrhœa in West Bromwich and Middlesbrough. 39 fatal cases of small-pox were registered in London, two in Willesden, one in Tottenham, and one in West Ham, but

not one in any other of the 76 large towns. The number of small-pox patients under treatment in the Metropolitan Asylums hospitals, which had been 873, 877, and 870 at the end of the three preceding weeks, had risen again to 1136 on Saturday, Feb. 1st; 499 new cases were admitted during the week, against 306, 213, and 204 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital was 2555, against numbers decreasing from 3137 to 2658 on the five preceding Saturdays; 226 new cases were admitted during the week, against 250, 288, and 299 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 366, 307, and 357 in the three preceding weeks, further rose last week to 374, but were 69 below the corrected average. The causes of 55, or 1·1 per cent., of the deaths in the 76 large towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Leicester, Nottingham, Salford, Leeds, Newcastle, and 44 other smaller towns; the largest proportions of uncertified deaths were registered in Willesden, Birmingham, Liverpool, St. Helens, and Blackburn.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 20·8 and 20·3 per 1000 in the two preceding weeks, increased again to 21·8 per 1000 during the week ending Feb. 1st, and exceeded by 3·9 per 1000 the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 10·9 in Perth and 18·6 in Paisley to 23·1 in Aberdeen and 23·2 in Glasgow. The 704 deaths in these towns included 23 which were referred to measles, 19 to whooping-cough, eight to diarrhœa, seven to scarlet fever, five to diphtheria, three to "fever," and one to small-pox. In all 66 deaths resulted from these principal zymotic diseases last week, against 56, 63, and 76 in the three preceding weeks. These 66 deaths were equal to an annual rate of 2·0 per 1000, which was 0·4 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of measles, which had been 23 and 31 in the two preceding weeks, declined again last week to 23, of which 16 were registered in Glasgow and five in Dundee. The deaths from whooping-cough, which had been five, 11, and 13 in the three preceding weeks, further increased to 19 last week, and included 12 in Glasgow, four in Aberdeen, and two in Leith. The fatal cases of diarrhœa, which had been 13 and 20 in the two preceding weeks, declined again to eight last week, of which two were registered in Glasgow and two in Dundee. The deaths from scarlet fever, which had been six and four in the two preceding weeks, rose again to seven last week, and included five in Glasgow and two in Greenock. The fatal cases of diphtheria, which had been six and five in the two preceding weeks, were again five last week, and included two in Glasgow, where two of the three deaths from "fever" and the fatal case of small-pox were also registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 176 and 128 in the two preceding weeks, rose again to 141 last week, and were 18 above the number in the corresponding period of last year. The causes of 37, or more than 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 25·0, 23·4, and 20·9 per 1000 in the three preceding weeks, rose again to 22·7 per 1000 during the week ending Feb. 1st. During the past four weeks the death-rate has averaged 23·0 per 1000, the rates during the same period being 18·3 in London and 18·7 in Edinburgh. The 165 deaths of persons belonging to Dublin registered during the week under notice showed an excess over the number in the preceding week, and included four which were referred to the principal zymotic diseases, against 10, six, and eight in the three preceding weeks; of these one resulted from measles, one from scarlet fever, one from diphtheria, and one from whooping-cough. These four deaths were equal to an annual rate of 0·6 per 1000, the zymotic death-rates during the same period being 1·8 in London and 0·3 in Edinburgh. The 165 deaths in Dublin last week included 20 of children under one year of age and 46 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a slight decline from the numbers recorded in the preceding week. Four inquest cases and two deaths from violence were registered; and 55, or one-third, of the deaths occurred in public institutions. The causes of five, or more than 3 per cent., of the deaths in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Staff Surgeon Ernest Edward Bray has been placed on the retired list at his own request.

The following appointments are notified:—Surgeons: A. La T. Darley to the *Britannia* for the *Racer*; J. N. Robertson to the *Goldfinch*; G. C. C. Ross to the *Magnificent*; W. L. Martin to the *Tamar*; and H. R. H. Denny to the *Vivid* for the *Thistle*.

ROYAL ARMY MEDICAL CORPS.

Colonel N. B. Major, from half-pay, to be Colonel (dated Jan. 4th, 1902). Lieutenant-Colonel E. H. Joynt is placed on retired pay (dated Jan. 19th, 1902). Civil Surgeon Leonard Cotterill to be Lieutenant (dated Dec. 5th, 1901).

Colonel R. C. Eaton, Officiating Principal Medical Officer, Bombay command, is granted six months' leave to proceed to Genoa for the benefit of his health. Captain C. E. Pollock is selected for duty in the Scottish District.

VOLUNTEER CORPS.

Rifle: The Queen's Rifle Volunteer Brigade, the Royal Scots (Lothian Regiment): Robert Abernethy to be Surgeon-Lieutenant. 1st (Brecknockshire) Volunteer Battalion the South Wales Borderers: Surgeon-Lieutenant H. Williams resigns his commission. 1st Volunteer Battalion the Dorsetshire Regiment: Surgeon-Lieutenant W. G. Brett to be Surgeon-Captain.

VOLUNTEER MEDICAL STAFF CORPS.

The Manchester Companies: David William Stevens Muir to be Surgeon-Lieutenant.

SOUTH AFRICAN WAR NOTES.

Lieutenant A. O. B. Wroughton, R.A.M.C., is reported to be slightly improved (Feb. 1st).

Civil Surgeon Bensusan is reported to be improving (Feb. 2nd).

Civil Surgeon Fort, no change (Feb. 1st).

Civil Surgeon Penn is reported to be a little better (Feb. 1st).

Civil Surgeon Armstrong is reported somewhat improved (Feb. 2nd).

THE ADVISORY BOARD.

In commenting upon the War Office proposals for the carrying out of the work of the Advisory Board for the Army Medical Service the *Army and Navy Gazette* makes some pertinent remarks. According to the constitution of the board junior officers will sit and deliberate on the promotion of their seniors. There are two comparatively junior officers of the Royal Army Medical Corps on the board—a lieutenant-colonel and a major. Can it be right, asks our service contemporary, that these officers should be allowed a voice in the question, for instance, of the promotion of their seniors, or, for the matter of that, in any detail in which the acts of their seniors are concerned? It is contrary to the rules of the service and the precedent is a dangerous one.

INCONSISTENCY OF A "CONSCIENTIOUS OBJECTOR."—At the Exeter Police-court on Jan. 27th a parent applied for a certificate of exemption from vaccination for his child, stating that several members of his family had suffered from the effects of vaccination. The mayor, who was on the bench, asked the man if he had a servant who contracted small-pox and his child had been in company with the servant what he would do under the circumstances. The conscientious objector promptly replied that he would have the child vaccinated. The magistrates did not grant him an exemption order.

Correspondence.

"Audi alteram partem."

A POINT IN THE ETIOLOGY OF ALCOHOLIC PERIPHERAL NEURITIS.

To the Editors of THE LANCET.

SIRS,—The reappearance of cases of chronic arsenical poisoning amongst beer-drinkers occurring a fairly considerable time after the Manchester epidemic must be regarded with great interest by those who now maintain that all cases of so-called "alcoholic" peripheral neuritis are not alcoholic but arsenical in origin.

In October, 1901, three persons suffering from the effects of chronic arsenical poisoning were admitted to the Halifax Union Poor-law Hospital. During January, 1902, four cases were admitted. These numbers, of course, compared with those of 1900 are very small. All the cases are of recent date and vary much in the severity of their symptoms, which in all cases are quite characteristic of chronic arsenical poisoning. Sufficient arsenic was found in the Halifax beer by Mr. Alfred Henry Allen of Sheffield, public analyst for the West Riding of Yorkshire, to account for these symptoms of arsenical poisoning. He found $\frac{1}{12}$th, $\frac{1}{24}$th, and $\frac{1}{48}$th of a grain per gallon of arsenic in the three samples of beer examined by him. Arsenic has been obtained from the urine of some of the patients, and in the case of the man who died it was detected in the tissues. In the stomach and two or three feet of small intestine Mr. Allen obtained indications of arsenic representing not more than $\frac{1}{10}\frac{1}{0}$th part of a grain. In three ounces of liver he found not more than $\frac{1}{10}\frac{1}{0}$th part of a grain. These quantities, though but small, would work out fairly large were the weights of the whole organs taken into consideration. A person would only be required to drink eight half-pints of the worst beer in order to obtain an average medicinal dose of arsenic ($\frac{1}{10}$th part of a grain), but here all are admittedly heavy drinkers and not likely to stop at that quantity.

With beer containing arsenic in injurious quantities, a history of the patients being heavy drinkers, and the clinical symptoms of chronic arsenical poisoning, it was not difficult to arrive at a correct diagnosis. Before the Manchester epidemic it is quite easy to see that a correct diagnosis might not have been made. It is obvious that arsenic as a causal agent in the production of "alcoholic" peripheral neuritis has been overlooked for the last 20 years, its share in the production being only found out when the quantity of arsenic contained in the beer was in such large amounts as to cause the increase in numbers of cases of peripheral neuritis to assume epidemic proportions. The most likely way in which arsenic gains access to beer, now that the brewing sugars are pure, is through the malt. This source will always have been there as long as the present methods of drying malt in the kilns have been used, providing fuel containing arsenic has been used. The grain in the kiln is exposed to the products of combustion of either coke or anthracite coal. Some cokes are known to contain quite large amounts of arsenic. If such fuel is being used then that used in the north must contain a much larger quantity of arsenic than that used in the south, thus accounting for the outbreak here and the rarity of the disease in the south. The susceptibility of different persons to the action of arsenic must also be taken into account as well as the conditions under which a man lives. With some persons very small medicinal doses of arsenic soon produce serious symptoms. Persons doing heavy work do not seem to be very susceptible to the influence of arsenic; this will account for the rarity of arsenical beer-poisoning amongst brewers' draymen, many of whom drink far more beer during the course of the day's work than an habitual drunkard. In the above cases the persons have not worked or their work has been of a sedentary character.

In Manchester and district since the use of brewing sugars containing arsenic has been discontinued, peripheral neuritis and alcoholic hearts have almost vanished, and from what I can hear from hospitals in surrounding towns there has been a similar and striking diminution in the number of cases of peripheral neuritis. The finding of arsenic as the factor in the production of the Manchester epidemic caused many to doubt the action of alcohol itself as the chief factor in the causation of peripheral neuritis, but the above facts prove undoubtedly, or at any rate go a long way towards proving, that the so-called "alcoholic" peripheral neuritis is not alcoholic but arsenical in origin. If this be so then it is not surprising that the cases of peripheral neuritis are few, for they will now be confined to the heavy drinkers and those specially susceptible to the action of arsenic.—I am, Sirs, yours faithfully,

J. F. HODGSON, M.B., Ch.B. Vict.,
Resident Medical Officer, Halifax Union Poor-law Hospital.
Feb. 3rd, 1902.

THE SANATORIUM TREATMENT OF CONSUMPTION.

To the Editors of THE LANCET.

SIRS,—It afforded me considerable pleasure to see that Mr. E. D. Marriott had apparently realised the inaccuracy of his statement that the financial problem involved in the erection of sanatoriums for the treatment of consumption was absolutely insoluble, and that he had altered his antagonistic attitude to the extent of saying "these institutions may form one of the lines along which we have to work." He, however, returned to the charge by repeating his assertions that the "atmosphere" of sanatoriums is more likely to lead to secondary infection than the "atmosphere" of ordinary houses, and that sanatorium treatment does not involve anything which cannot be carried out at home. Mere repetition of an assertion, however, even when couched in somewhat exaggerated language, does not necessarily constitute proof. I hesitate to trespass further on your space by referring to well-known facts, as it seems almost hopeless to attempt to convert your correspondent in view of his declaration that he "neither has nor wants to have anything to do with the attitude of Germany in this matter," although the bulk of our knowledge on sanatoriums is derived from the 40 years' experience which our neighbours have had on this subject.

As regards the question of liability of secondary infection at sanatoriums I would call Mr. Marriott's attention to a number of experiments which have been carried out in Germany, America, and this country upon the infectivity of the dust found in sanatoriums and in houses in which a consumptive has lodged. These experiments were carefully considered by the members of the council of the National Association for the Prevention of Tuberculosis before they adopted the following resolution:—

> Having understood that apprehensions have been entertained as to the spread of consumption from sanatoria established for the treatment of this disease, the Council of the National Association for the Prevention of Consumption desire to express their opinion that there is no danger of communication from any well-conducted hospital for consumption or from any sanatorium where the open-air treatment for this disease is properly carried out; and, further, that the inhabitants of houses in the immediate neighbourhood of such institutions are perfectly safe from local propagation from this source.

The council of this association is composed of eminent members of the medical profession and their opinion is entitled to some weight. I may, perhaps, be allowed to quote one or two of these experiments. Cornet in his work, 13 years ago, on this subject showed that in most cases where tuberculous patients, or a single patient, occupied a room of an ordinary house, the dust from this source contained tubercle bacilli which were sufficiently virulent to kill guinea-pigs. Dr. Biggs of New York and Dr. H. Coates of Manchester have confirmed this statement. Dr. Coates recently found virulent tubercle bacilli in over 66 per cent. of dirty houses and in 50 per cent. of clean houses.[1] On the other hand Dr. I. Hance of the Adironack Cottage Sanatorium proved by the inoculation of guinea-pigs that out of 17 cottages, inhabited by consumptives for so long a period as 10 years, 16 were absolutely free from infectious material. In the seventeenth cottage a patient had disobeyed instructions and had expectorated wherever convenient. Dr. Achtermann, when he was connected with the Brehmer Sanatorium, tested by means of inoculation the dust from the corridors, recreation rooms, water-closets, and patients' bedrooms during a period which extended over several years. Only once did he find evidence of tubercle bacilli and then from dust on a washing board where a sputum flask had stood. These figures prove, f they prove nothing else, that

[1] The percentages were probably higher, as in some cases the dust killed the guinea-pigs before it was possible to ascertain the presence of tuberculosis.

in sanatoriums more efficient means are adopted for the destruction of tubercle bacilli than in ordinary houses. The principles of careful disinfection are not readily taken up by the public and one of the many virtues of the sanatorium method of treatment is that it helps to educate people in this respect. I refrain in consideration of your space from going into further detail, but if your correspondent is still unconvinced I would refer him to the original papers on this subject and to Dr. Rufenacht Walters's and others' books on sanatoriums.

Mr. Marriott reiterates his statement that isolation fever hospitals breed secondary infection and post-scarlatinal diphtheria, and that therefore sanatoriums for consumption must be responsible for something of the same kind. He is convinced of this because "secondary infection and post-scarlatinal diphtheria never obtain in ordinary houses." Your correspondent's experience must have been a singularly fortunate one, for it is no uncommon thing in London to see children who have fallen victims to secondary infection or diphtheria after an attack of scarlet fever, although they have been treated in their own homes. I should like to say more concerning these isolation hospitals, but this question is somewhat beside the point. An *a priori* line of argument is seldom convincing, and it would be more satisfactory if Mr. Marriott brought forward instances of secondary infection which have occurred in sanatoriums for tuberculosis. If such cases have occurred he should have no difficulty in producing them, seeing that this form of treatment has been in existence for 40 years.

Your correspondent further asserts that the personal factor of a patient cannot receive the same attention in a sanatorium as at home. Is this in accordance with fact? At an efficient institution of this kind each patient is seen professionally at least three times a day, and also takes his meals under the immediate supervision of the physician. In addition to this, every detail of his life, such as the amount of exercise he may take, the literature he may read, and the like, receives the most anxious and painstaking consideration. It is this careful attention to an infinity of detail which is one of the most characteristic features of sanatorium treatment; it is more essential than the nature of the building, but I can see no reason why Mr. Marriott, who champions good sanitation, should object to the institution being made as healthy as possible. The necessary discipline of such treatment as the above cannot in the nature of things be carried out at home until the patient's disease has become quiescent and he has learnt the true value of its details. 40 years' experience has shown that when the attempt is made to treat a case from the first at home it not infrequently fails.

Dr. Walther, who prefers severe cases, brings about arrest of the disease in 30 per cent. (Knopf) of his patients, and these continue to do well after they have left the Nordrach Colonie. He only fails to obtain considerable improvement in 5 per cent. of his cases, and his world-wide reputation, to which your correspondent refers, is due to the enormous amount of attention he devotes to the personal factor of his patients. Other efficient sanatoriums give equally satisfactory results. Can Mr. Marriott show anything to equal these figures by home treatment in all stages of the disease?

No one will deny that good sanitation is the best weapon we have for the *prevention* of tuberculosis and is largely responsible for the diminution in the mortality from this disease in the last 60 years, a period which coincides, as Dr. J. E. Pollock has pointed out, with the time during which the Brompton Hospital has been in existence. I cannot, however, agree with Mr. Marriott that in treating those already afflicted with the disease we should deny them the form of treatment which on 40 odd years' experience has been shown, not, it is true, to cure every case, but to be the best with which we are acquainted.

I am, Sirs, yours faithfully,

Brook-street, W., Jan. 29th, 1902. ARTHUR LATHAM.

IS SALT A PROBABLE CAUSE OF CANCER?

To the Editors of THE LANCET.

SIRS,—The letter of Mr. R. D'Oyly Noble in THE LANCET of Jan. 25th, p. 281, is founded upon an assertion which I think is incorrect. Having admitted that I have conclusively proved in my paper upon this subject, a short abstract of which was published in THE LANCET of Dec. 7th, 1901, p. 1578, that in those sections of the country in which a very large amount of bacon and ham is consumed, as in the Malton and Pickering cancer field, the disease of cancer is most prevalent, he suggests that the cause is not an excessive amount of salt consumed—along with, I suppose, an unnecessary amount of animal food—but that it is owing to the bacon or ham being itself unclean, owing to American pigs being habitually fed on the entrails and blood of slaughtered animals, many of which are infected by diseases of a cancerous nature. I think this is a gross libel upon the Americans; but even if it were true—which it cannot be, for they rear their own pigs—there would be no harm in letting pigs eat the entrails of slaughtered animals. It is not a nice idea, but hens are commonly given in this country chopped sheep's entrails. Nothing is found to make them lay eggs better and neither the eggs nor the hens are infected from the food. We manure our corn with the most offensive dung, but the wheat is quite pure. In growing celery the dung comes into close contact with the plants and they are not injured thereby. We ourselves habitually eat semi-putrid game, previously cooked I admit, but it cannot be called clean food for all that. I do not believe for a moment that the diseases of a cancerous nature spoken of are such—and, moreover, if the pigs eat the entrails, who eats the cancerous meat?

If I could persuade the Editors of THE LANCET to publish my paper in full some misconceptions about it would disappear, especially that I founded the theory in any way upon the comparative immunity of the Jews from cancer. I merely mentioned this as one of three points which first drew my attention to the subject, and after further investigation, although it has confirmed the opinion that Jewesses are almost exempt from cancer of the uterus and that Jews are less liable to cancer generally than we are, I now doubt whether this has any connexion with the ingestion of salt. Whether, however, this is so or not does not affect my argument in the least, as it was not founded upon it.

What I complain of in the present ideas about the investigation of cancer is that so-called committees are suggested and money is asked for to make further researches when the materials are already at hand to come to a pretty definite conclusion. Almost hundreds of facts are known about the disease, but these facts are not utilised by comparing one with another. A criminal is being looked for who is destroying our population in a most deadly and painful manner. Why not see what circumstance or object is common to all cases of cancer? This is precisely how a detective would set to work in a criminal investigation. If in a number of burglaries a certain man could be proved to be invariably close to the spot in every instance, although not actually seen to do the deed, I think almost any jury would convict him. My point is, that whenever cancer exists two at least of four factors must be present. One of these is salt in some excess, the other is a local irritant. Of the other two factors—viz., over-feeding and effeteness—one is usually present, but not necessarily. I think that a small amount of salt is necessary to health, but if taken in the large amount it usually is, along with a good deal of meat, it is dangerous as age advances, and highly dangerous if the life is an indolent one and passed much indoors. On the other hand, I think salt quite inoperative unless with the coöperation of some local irritant, such as the sharp edge of a stump in the mouth or an unglazed tobacco-pipe. There is one most remarkable instance of a local irritant mentioned in my full paper. The natives of Cashmere carry a small brazier of hot coals pressed against the skin of the abdomen to keep themselves warm in lieu of sufficient clothing in winter. This causes cancer of the skin. They take a large amount of salt, and salt, rice, peas, and wheat are the only things common to them and to us; everything else in food and general environment is different.

I am, Sirs, yours faithfully,

Leeds, Jan. 24th, 1902. JAMES BRAITHWAITE.

SECOND ATTACKS OF SMALL-POX.

To the Editors of THE LANCET.

SIRS,—In support of your remarks in THE LANCET of Jan. 25th, p. 248, on this subject, I may say that recently one of my sanitary inspectors said that he did not think that he need be revaccinated as he had had small-pox and had been kept from work for three months in consequence. As his face was unscarred I questioned him as to symptoms, distribution of eruption, &c., and came to the conclusion that his supposed attack of small-pox had been one of chicken-pox. This opinion was

strengthened by the fact that vaccination ran an ordinary course. I suspect that not a few people who think themselves immune through having already had an attack of small-pox are buoying themselves up with a false belief, having had chicken-pox and not small-pox. The only means of obtaining any degree of assurance as to immunity to small-pox is to submit to vaccination and see the result.

I am, Sirs, yours faithfully,

J. T. C. NASH, M.D. Edin., D.P.H. Cantab.,
Medical Officer of Health.

Southend-on-Sea, Jan. 28th, 1902.

FIRST AID FOR PRIMARY HÆMORRHAGE: THE WRONG INSTRUCTION GIVEN TO AMBULANCE CLASSES.

To the Editors of THE LANCET.

SIRS,—I have read with the greatest gratification the leading article in THE LANCET of Jan. 25th, p. 238, and as I have been connected with the ambulance movement ever since its commencement I can thoroughly endorse all you say. The teaching of the St. John Ambulance Association is excellent in every way and the treatment of hæmorrhage, the most important of all matters which the first-aid student has to deal with, is thoroughly taught. The efficiency of the men in the St. John Ambulance Brigade is tested annually and no man is allowed on duty in the streets of London except those who have passed the re-qualifying examination; so the general public may know that in the men of this brigade they have those upon whom they can thoroughly rely. With the general public who hold certificates of ambulance work, however, no such precaution is taken; they attend ambulance lectures and afterwards fail to keep up their knowledge, and relying upon the fact of having once gone through a course of instruction, sometimes several years ago, presume to render "first aid" on the strength of what has been largely forgotten.

I have suggested, and I hope it may sooner or later be adopted, that students who take an interest in this work and have presented themselves for examination on three occasions shall have further power of periodical re-examination if they desire to keep themselves efficient in this, one of the most useful subjects which they can learn. The first-aid movement has rendered incalculable benefit to many a sufferer and to judge or to condemn it on account of one or two mistakes in the face of the numerous benefits conferred upon so many would be palpably unjust. The remedy lies in greater severity in the matter of examinations, as to whom certificates of efficiency are granted, and in the necessity of making those certificates which are gained only applicable to one year, or at the most two years, from the date of issue.

I am, Sirs, yours obediently,

SAMUEL OSBORN,
Chief Surgeon, Metropolitan Corps, St. John Ambulance Brigade.

Feb. 3rd, 1902.

To the Editors of THE LANCET.

SIRS,—If Mr. Walter G. Spencer will kindly re-peruse my letter in THE LANCET of Jan. 18th, p. 194, he will see that I do not ask him to say what *he* would have done but "what the comrades ought to have done" in the sad case which I quoted. Mr. Spencer says: "It must be some kind of very large chaff-cutter to draw in *both* a man's legs—they would first be crushed by the rollers before being cut off. The result would not be different from a railway accident. Owing to the shock and the crushed ends of the arteries there would be no great arterial hæmorrhage." But the poor man died from hæmorrhage. We know that Mr. Spencer is an excellent surgeon and we feel sure that if he had been present "the rapid and efficient application of a tourniquet" would have been accomplished, and further, I believe that the man's life would have been saved. Mr. Spencer advises "that the instruction to an elementary class as regards such an accident should be that elevation and local pressure is to be applied at once and the tourniquet reserved until the patient is anæsthetised and the surgeon ready to explore the injury"; are there accidents which do require "the rapid and efficient application of a tourniquet" to save life? The St. John Ambulance Association says that there are, and you, Sirs, in your excellent leading article on this subject in THE LANCET of Jan. 25th, p. 238, also say there are; your words are pointed and cannot be misunderstood. You write: "To solve the problem of the correct treatment of hæmorrhage we must go back to general surgical principles. In the first place, we must distinguish the hæmorrhage after wounds of vessels in their continuity from that due to the complete removal of a part of a limb. In the latter case there is no room for doubt that a firmly applied tourniquet is the only method of rapidly controlling the extensive hæmorrhage which is generally present." It follows, therefore, that ambulance pupils *must be taught* how to apply a tourniquet rapidly and efficiently. Although I believe similar cases to the one referred to are not so infrequent as Mr. Spencer appears to me to think, the frequency has nothing to do with the matter. First-aiders have saved many a life, and may they continue their noble work, notwithstanding the discouragement which they have received from Mr. Spencer and a few others.

I am, Sirs, yours faithfully,

Ongar, Jan. 28th, 1902. J. B. G. GIDLEY-MOORE.

THE TREATMENT OF METRORRHAGIA.

To the Editors of THE LANCET.

SIRS,—In his recent paper on the Uterine Curette, read before the Liverpool Medical Institution, an abstract of which appeared in THE LANCET of Jan. 25th, p. 229, Dr. H. Briggs adopted a very pessimistic attitude towards curettage—a proceeding which is frequently disappointing in its results to all gynæcologists. He mentioned one case of a woman who consulted him for a purulent condition of the uterus whom he had advised to relinquish local in favour of general hygienic treatment. In another case, where metrorrhagia recurred after curettage, he removed the uterus, there being no evidence brought before us of the existence of malignant or other grave disease. The impression I received from his paper was that Dr. Briggs was feeling his way to hysterectomy in the treatment of endometritis, or rather of metrorrhagia. The profession will be interested to learn whether this impression is a correct one, and how far Dr. Briggs suggests we should go in radical treatment for such conditions. The responsibility of surgeons in such cases is a very grave one, and the limits of justifiable operative treatment are, in my opinion, soon reached.

I am, Sirs, yours faithfully,

Liverpool, Jan. 25th, 1902. GEORGE A. HAWKINS-AMBLER.

DEFICIENCY OF THE BILE-SALTS THE PROBABLE PREDISPOSING FACTOR IN TUBERCULOSIS AND FATTY FOODS CONTRA-INDICATED IN ITS TREATMENT.

To the Editors of THE LANCET.

SIRS,—I have been for some years past of the opinion that the "bile-salts" played an important rôle with regard to tuberculosis, and now that the world is all agog with the subject of tuberculosis I wish to place my views and the results of my observations and deductions before the profession. It is well known that "tubercle bacilli" are difficult to grow on ordinary media, but by the addition of glycerine to the media a luxuriant growth is produced. I made a series of cultivations of tubercle bacilli in glycerine agar-agar and then endeavoured to cultivate them in glycerine agar-agar impregnated with the "bile-salts" (glycocholate and taurocholate of sodium). In many cases I failed to get any growth at all, and when I did succeed the growth was very feeble indeed. I repeated this experiment with several other meda with the same result. Encouraged by these results I determined to try the effects of giving pig bile, "which most nearly resembles human bile," in large doses to a well-pronounced case of pulmonary tuberculosis; and bearing in mind the fact that "bile" in the intestines saponifies as well as emulsifies fats and oils and produces glycerine as a by-product, I prohibited the use of all fatty foods, including cod-liver oil, cream, &c., and kept the patient on a strictly but abundant nitrogenous diet with the idea of starving the "tubercle bacilli" of its congenial pabulum—i.e., "glycerine." The improvement was very marked, the cough improved, the evening temperature dropped, the night sweats discontinued, and a remarkable change occurred in the facial

appearance of the patient; the peculiar transparent skin which one sees in phthisis was changed to a robust complexion. The bile-salts evidently play a very important part in the human economy, judging from the quantity manufactured daily and their absence in the excretions of the body. Physiologists tell us now that they play a subsidiary part in digestion. What, then, is their true function? My investigations satisfy me that they play an important part with regard to tuberculosis.

I am, Sirs, yours faithfully,

J. G. WILLIS,
Feb. 4th, 1902. Medical Officer of Health of Ilkeston.

THE DANGERS OF A COMMON COLD.

To the Editors of THE LANCET.

SIRS,—I do not know if I am exceeding the bounds of your liberality in again venturing to write on the subject of colds. Rightly or wrongly, I consider it a question of supreme importance and I think you must admit that since I broached the question in THE LANCET of Nov. 9th, 1901, p. 1297, the correspondence has proved of much interest, and the points raised are not likely to be ignored by our profession. As to the general infectiveness of colds, the clinical evidence is only too apparent and any medical man can satisfy himself on this point if he will make careful and sufficient inquiries amongst his patients where colds have occurred. Personally, during the last three months I have kept a record of cases occurring in households where colds have been prevalent. So frequently have the majority of the family been affected more or less in the different households as to prove conclusively with what ease and rapidity the infection of colds is spread.

Amongst many instances I should like to mention the following. In a household of five adults, on Dec. 19th, 1901, the servant was taken ill—rhinitis, pharyngitis, slight bronchial catarrh, temperature never rising to 100° F. On the 22nd the lady of the house developed the same symptoms, temperature never rising above 99°. On the 23rd four visitors arrived at the house—viz., father, mother, and two children. On the 26th one of the children was taken ill with the same symptoms, temperature rising to 102°. The other child was taken ill on the 29th. On Jan. 2nd, 1902, the mother was taken ill, temperature not rising above 100°. On the 4th and 9th the head of the household and the second servant became infected. All the patients were practically convalescent in a week's time from the commencement of the illness. Similar examples occurred in a district some distance from the above. A mother and her elder daughter, a teacher in a school some miles from her home, came to see me. The mother was suffering from a subacute attack of bronchitis. She stated that her elder daughter had a cold; she caught it from her, and it brought on an attack of bronchitis, to which she was subject. Her younger daughter, who is the head-mistress at the same school, developed a cold on Dec. 30th, 1901. Here out of a household consisting of only four persons three suffered from cold. Upon further inquiry it appears that including the above two teachers seven are engaged at the same school, and without exception every one of them has suffered within a period of four weeks from colds. Only one was for a day or so prevented from her school duties, and none have found it necessary to consult a medical man. The symptoms generally complained of were slight nasal catarrh, headache, sore throat, hoarseness, slight cough, &c.

These cases must be considered either as febricula due to common cold or to a modified form of influenza. If this sequence of symptoms be looked upon as a common cold it must be considered as highly infectious and contagious. Regarding the question of influenza, I can only say from an experience of over 20 years in active general practice, firstly, they did not exhibit the symptoms of influenza, with the exception of its extraordinary infectiveness; and, secondly, that influenza was not prevalent in the district. Presuming that these cases, and others which in my opinion are clinically indistinguishable, and which go by the name of common colds, are influenza or a modification of it, it is evident that such an affection, which follows the trade routes and is only propagated by personal contact, cannot be too jealously isolated, and only carelessness would allow such a case to be in proximity to any person suffering from any chronic disease of the respiratory tract. In all probability cats and other domestic animals disseminate catarrhs and colds. In Gloucestershire and some other places popular feeling is such that if the domestic cat shows symptoms of a cold it is at once ostracised from the family circle. "Popular beliefs are not necessarily scientific fallacies." Injuries undoubtedly predispose the deposition of morbid products in the injured parts, as witness what is called a "collier's back" or say any fracture in rheumatic subjects. These cases become more prolonged, tedious, and painful owing to the presence of the secondary condition, rheumatism. Put as a proposition, it would read thus: Overstimulation leads eventually to degeneration, and the form of degeneration depends upon the inherited and acquired characters of the individual. Further examples are shown in miner's nystagmus and trade palsies.

In a somewhat similar manner a vital or a chemical poison, such as is produced by colds in the system, is often the spark that lights up any latent mischief present. This is only a theory, but it is popularly accepted and requires to be proved or disproved. Its importance is self-evident. The essential thing to be inquired into is the bacteriology of colds. I am endeavouring to get this point worked out for myself, and it is in the hope that some of your readers, greater adepts in modern research than myself, may assist in this matter that I pen these lines.

I am, Sirs, yours faithfully,

Wigan, Jan. 21st, 1902. R. PROSSER WHITE.

A POINT FOR PUBLIC VACCINATORS.

To the Editors of THE LANCET.

SIRS,—A short time back, on Jan. 2nd, lymph being urgently required, I sent a telegram to the National Vaccine Establishment and, knowing our applications for lymph by post were sent free to the same address, as O.H.M.S., I sent the telegram free as a test case. Two telegrams were sent in all. An application was made to me for payment which I refused, and I wrote a formal letter to the Post Office stating my reasons—viz., that my postal applications go free, as O.H.M.S., and that I did not see, therefore, why telegrams should not go in the same way. I inclose the application. When the objection was put forward by them that I was not an officer with a salary entirely voted for in Parliament, I pointed out that a policeman can report a case of swine fever by free telegram to the Local Government Board, as O.H.M.S., and that I thought that a public vaccinator, finding small-pox in two towns near his district, should be able to apply by free telegram in a similar way for lymph.

I consider the efforts of medical officers of health to stay small-pox, already scattered through many districts in England, ought to be helped as much as those of the policeman to prevent the spread of fever in a herd of swine. Though I am perfectly willing to pay the few pence for the telegrams I should like your opinion on the case, as the anomaly is so peculiar that the medical officer of health's applications must go by post as O.H.M.S., while the rural policeman can telegraph. I should like to hear how many public vaccinators received the same treatment that I have in their efforts to prevent a scourge from spreading. The Local Government Board agrees with the General Post Office in stopping its medical officers from obtaining supplies of lymph quickly by telegram at a time of necessity and apprehension in an infected district.

I am, Sirs, yours faithfully,

HENRY T. WHITLING, M.B., B.S. Durh.,
M.R.C.S. Eng., L.R.C.P. Lond.

Husband Bosworth, Rugby, Feb. 3rd, 1902.

[INCLOSURE.]

General Post Office, London, 1st February, 1902.

SIR,—With reference to your letter of the 8th ultimo, I am directed by the Postmaster-General to inform you that the privilege of sending telegrams free of charge as on Government service is confined to officers of the Crown receiving salaries wholly provided for out of the annual Parliamentary votes.

The matter has been referred to the Local Government Board who state, in reply, that the position occupied by you does not entitle you to send telegrams free of charge.

In these circumstances I am to ask you to be so good as to affix stamps of the proper value to the inclosed forms, and to return them to this office.

I am, Sir, your obedient servant,

Dr. Whitling. C. G. HALL (for Secretary).

*** We agree with our correspondent that it is at least as important that a medical officer of health should be able to take, without expense to himself, immediate steps to arrest an epidemic of small-pox as that a policeman should be able

to do the same in respect of swine fever. The law, however, is the law, and our correspondent, as far as he has tested it, has found it against him. We shall be pleased to hear what other public vaccinators may think of the position, as the law might be amended in response to a vigorous expression of opinion.—ED. L.

ROYAL MEDICAL BENEVOLENT COLLEGE.

To the Editors of THE LANCET.

SIRS,—Under the provisions of the will of the late Mr. France the Council of the Royal Medical Benevolent College will proceed to elect at their meeting on April 2nd eight aged and necessitous medical practitioners to annuities of the value of £30. Particulars can be obtained from the secretary at the office of the College, 37, Soho-square, W.

I am, Sirs, yours faithfully,

C. HOLMAN, Treasurer.

37, Soho-square, London, W., Feb. 3rd, 1902.

THE EDINBURGH SCHEME FOR A PSYCHIATRIC CLINIQUE.

To the Editors of THE LANCET.

SIRS,—In your leading article on "The Edinburgh Scheme for a Psychiatric Clinique" in THE LANCET of Feb 1st, p. 318, you appear to bestow your unqualified blessing upon the London County Council scheme for the establishment of reception houses for the preliminary treatment of the insane. You apparently are unaware that each Poor-law district in London possesses one or more such reception houses in the shape of fully-equipped and up-to-date mental wards attached to the various infirmaries. The buildings belonging to the Lewisham Infirmary consist of a handsome separate block, accommodating 11 male and 11 female patients, and fitted with all modern appliances. The system which upon my recommendation has been carried out by the local magistrates and guardians of the poor is to detain all cases of alleged lunacy in the mental block for a variable period before deciding upon their transfer to an asylum. The most gratifying results have attended our treatment. Out of 1382 cases treated during the past seven years 742 have been discharged cured, 144 have died, 20 have been sent to imbecile establishments, and only 476 have been sent to asylums. The majority of the deaths were cases of senile dementia.

The objections to the London County Council scheme are many. The change will simply be from one authority to another, but it will involve the enormous expenditure associated with the building and staffing of at least four large institutions. I anticipate that the buildings alone would cost over £500 000. The expense of collecting the patients from the wide area feeding each reception house must be considered. There is also the hardship inflicted upon the relatives and friends of the patients by making them travel long distances for the purposes of visiting, &c.; but the strongest argument against the proposed change is the stigma of "lunacy" which will rest upon the reputation of every patient who enters a reception house. Under existing arrangements no such stigma is attached, the patient has simply "gone into the infirmary," a circumstance to which no disgrace is attached. There is an adage which asserts "that because the kittens were born in the oven it did not make them loaves of bread," but it will be found that by whatever euphemistic title the reception houses may be called they will be lunatic asylums to the public, and it is only those whose work brings them into contact with lunacy who can appreciate the fearful stain left upon a bread-winner and his family by the circumstance that he has been "sent to an asylum." In conclusion, I have no hesitation in asserting that the "early" mental cases are treated efficiently and thoroughly in the London infirmaries and that any change would be for the worse and not for the better. If there be a demand for the utilisation of these unfortunate cases for clinical study, the medical staff of the infirmaries is thoroughly capable of giving that instruction. Your statement that "the expense and moral cruelty of sending to an asylum those early cases which only required a few days' care ..... led to the suggestion of receiving houses" is incorrect, as for many years past the London county asylums have been quite full and it is rare to obtain a vacancy until the lapse of a fortnight and often a month after application.

I am, Sirs, yours faithfully,

F. S. TOOGOOD, M.D. Lond.,
Medical Superintendent of the Lewisham Infirmary.

Lewisham, Feb. 1st, 1902.

*** It was with a full knowledge of the existence of insane wards in workhouses and also of the treatment of patients in them that we advocated the system of "reception houses." The limited experience of those in charge of the "reception house in the shape of an up-to-date mental ward" at the Lewisham Infirmary is confirmatory of the principle laid down. But before the workhouse wards, where the people of unsound mind are detained prior to being sent to asylums, can be considered as fully equipped and suitable for a psychiatric clinic a great deal would have to be done, as anyone who is fully cognisant of the present system ought to know. Our correspondent's views as to the manner in which the public will estimate the receiving houses (we proposed the term "hospitals") are not in accordance with the views of those who have had larger experience, and his assertion that "any change would be for the worse" is merely the record of an opinion which ought to receive a rude shock. Dr. Toogood concludes his letter by flatly contradicting us, and on completely irrelevant grounds. If he had been familiar with the work and reports of the medical superintendents of asylums he would not have done so, that is, if he has any regard for the accuracy of what he writes.—ED. L.

THE DOSE AND LENGTH OF INCUBATION IN MEASLES AND VACCINATION.

To the Editors of THE LANCET.

SIRS,—The letter from Mr. Kingston Barton which appears in your issue of Feb. 1st, is so incoherent as to be difficult of understanding. A light, however, may be thrown on the latter half of it when we state that we declined absolutely to pay £5 that Mr. Kingston Barton demanded of us for want of success in vaccinations.

We are, Sirs, yours faithfully,

JENNER INSTITUTE FOR CALF LYMPH
(James Douglas, Manager).

Church-road, S.W., Feb. 4th, 1902.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

General Increase in the Plague Mortality.—Further Increase in the Famine.—The Rangoon General Hospital.—The New Director-General of the Indian Medical Service.

THE plague figures for India have again risen. The total this week is 9566 deaths, as against 8005 for last week. They were distributed as follows: Bombay Presidency, 4307, as against 3814; Bombay city, 206, as against 168; Madras Presidency, 501, as against 418; Punjab, 2348, as against 2049; Bengal, 443, as against 316; Calcutta, 22, as against 28; North-West Provinces and Oudh, 665, as against 488; Mysore State, 791, as against 454; Hyderabad State, 49; Central India, 198; and Karachi city, 36. Poona city for some reason is left out, but I find from local reports that over 300 deaths occurred in it for the week ending Jan. 5th. Kashmir State had 198 deaths. It will be seen that the epidemic is now more widely distributed than ever and that in the majority of provinces it is increasing steadily. The recrudescence in Bombay city is unmistakeable and Poona city is in the throes of another severe outbreak. There are also signs of development in Calcutta and the quarter of the city hitherto first affected is returning more cases. For the past year Karachi city records 3700 cases of plague, with 2984 deaths—a case-mortality of 80 per cent. For 1901 up to the end of November last the official returns for the whole of India give 307,000 seizures and 233,000 deaths, and up to Dec. 14th Bengal had 90,000 seizures and 78,000 deaths, as compared with figures of less than half these for the previous

year. This shows the generally unrecognised increase of the epidemic during the past year.

The famine figures have again largely increased, especially in the Bombay Presidency and in the Baroda State—the total numbers receiving relief being over 140,000.

In consequence of the unsatisfactory state of the Rangoon General Hospital it is to be taken over from the municipality and placed under the control of the Government.

The new Director-General of the Indian Medical Service is Colonel B. Franklin, I.M.S., C.I.E. The appointment is one for three years, and the new director has somewhat over two years' service before he attains the age of 60 years.

Jan. 11th.

THE DESTRUCTOR NUISANCE AT TORQUAY.

(BY OUR SPECIAL SANITARY COMMISSIONER.)

(*Concluded from p. 336.*)

ATTEMPTED IMPROVEMENTS.—FAILURE OF THE CREMATOR SYSTEM.—INTRODUCTION OF BAFFLING WALLS.—THE CHARACTER AND VALUE OF THE DUST PRODUCED.—THE ALTITUDE OF THE SURROUNDING HILLS.—A VALUABLE EXPERIMENT.

IN response to the earlier complaints made against the destructor, notably by the former Marychurch Urban District Council, the Torquay Town Council constructed, as already stated, a Jones's patent coke cremator. The destructor consists of a square block of brickwork which is subdivided into four cells or furnaces. Underneath there is a passage which is large enough for a man to enter when stooping and which serves as a flue to draw off the products of combustion. This passage is prolonged outside and beyond the cells for a distance of about 35 feet when it reaches the base of the chimney. The part of the passage nearest to the cells is wider and forms a small chamber. It was in this chamber, close to, but outside, the destructor, that the cremator was placed. It consisted of a grid on which coke was burnt, and it was anticipated that the products of combustion when deflected on to the live coke would be further consumed and thus rendered innocuous. At Ealing and elsewhere it had been found that the vapours given off during the first stage of burning the refuse and the escape of fine dust caused a nuisance. When fresh refuse was shovelled into the cells and for some time afterwards the temperature was so lowered that the combustion was not perfect. Therefore, and in view of meeting such defects, a cremator, consisting of a reverberatory arch with rings of fire-brick so placed as to deflect the gases on to the top of a red-hot mass of fire, was invented and is generally placed outside the destructor. Dr. Stevenson Macadam, Ph.D., F.T.C., has, however, described these cremators as an admission of the inefficiency of the destructor proper and as a mere white-washing of an imperfect machine. Unfortunately, the cremator at Torquay did not fulfil even this function. The complaints continued in spite of the cremator, and recently the town council sought the advice of an expert. Members of the town council expressed to me their desire to carry out the advice of competent experts, though they were not willing to incur expense in order to apply suggestions made by amateurs who had no technical knowledge of the question.

The result of the expert advice recently obtained has been the adoption of modifications which constitute a complete revolution of the system formerly applied. The temperature of the products of combustion as they left the cells was increased by being deflected and thrown upon a red-hot coke fire. Further, the heat of this cremator fire acted as a powerful attractive force, drawing the products of combustion more rapidly out of the cells and, therefore, increasing the velocity of the draught towards and up the chimney. Under these circumstances particles of grit which might otherwise have dropped to the ground were hurled up the chimney and distributed by the wind over the surrounding country. The method now adopted is the exact reverse of this process. The cremator has been removed. There is no longer a fire outside the destructor to draw away more rapidly the products of combustion. On the contrary, a chamber has been built containing several baffling walls. As the products of combustion leave the destructor they enter this chamber and strike against a wall which faces them. They have to travel along this wall till they reach its furthest extremity and here is an opening which enables them to go forward a distance of two or three feet, when they are again obstructed by another wall. Travelling down the whole length of this second wall they are only able to progress a little further, when they attain the nearer end, and here a second aperture lets them through, to be, however, again checked by a third wall. It is only by travelling up and down several such walls that the products of combustion, after pursuing this zigzag course, at last reach a straight flue which conducts them to the bottom of the upright chimney shaft; therefore, the velocity of the draft, instead of being increased by the heat of the burning coke of a cremator, is checked by this obstruction. The temperature of the products of combustion, instead of being augmented by a cremator fire, is lowered by the baffling walls. There is, in any case, one advantage that must accrue from this system—the amount of grit reaching the chimney will be considerably reduced. A large quantity of this grit will be collected between these baffling walls. But it will easily be understood that the adoption of such contradictory methods must shake the confidence of the public in the ability of the town council to solve the difficult problem at issue. First, the council denies that there is a nuisance, then it admits its existence by constructing a cremator which it declares will definitely remove all cause of complaints. The complaints, however, continue, and, as in the first instance, the council strives to prove that they are unfounded, but nevertheless tacitly admits that they are justified by attempting yet another alteration. Then, as a further contradiction, this alteration is precisely in the reverse sense to the one first attempted. Instead of, as at first, increasing the velocity and the temperature of the products of combustion it lowers the temperature and decreases the velocity at which they travel from the destructor to the chimney. This lowering of the temperature of the products of combustion after they have left the destructor will do no harm if that temperature is well maintained within the destructor. The introduction of steam-jets may help to bring about this desirable results.

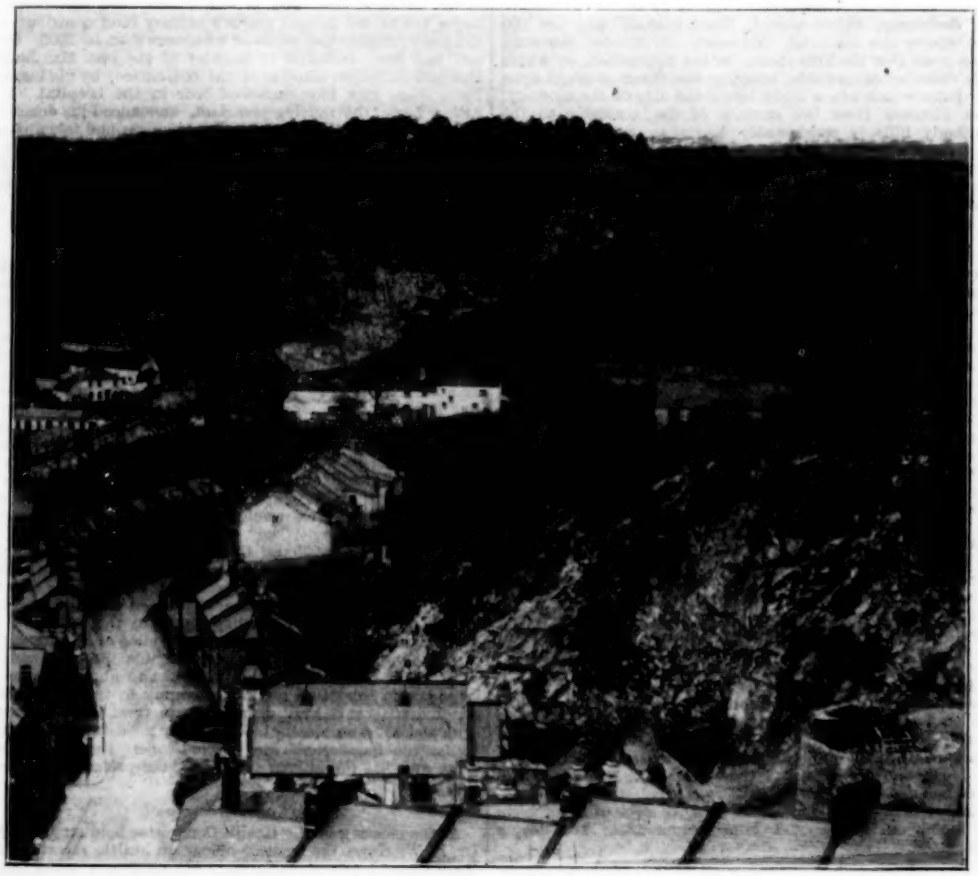
When I was at Torquay these alterations were being effected. The chamber with the baffling walls was in course of construction and, of course, the destructor was not in use. Consequently I was able to go inside and to visit the flues. The total absence of soot in the flues showed that the combustion, if not perfect, was in any case far advanced. There was a great quantity of grit laying about that seemed like fine sand. Indeed, it was mainly silicious in its nature, though iron and other minerals enter into its composition. The result is a dust like emery powder which is so hard that it scratches glass. Viewed under the microscope this grit has a terrifying aspect. Some of the particles have the shape of Turkish scimitars. One of them had a bar at the broader end forming the cross-guard of the sword pummel. If such a sharp and jagged particle entered the eye it would produce extreme irritation and no amount of tears could dissolve this hard silicious substance. How far the inhabitants of Torquay have suffered from this destructor dust I am unable to say. Only one case was mentioned to me of a person who worked near the destructor and suffered acutely from inflammation of the eye which careful treatment failed to cure. But the patient did recover when he gave up his work and avoided the neighbourhood of the destructor. This, however, may have been a coincidence, and one such case is not sufficient evidence. It is, however, satisfactory to know that the amount of this dangerous dust thrown out from the destructor chimney will be considerably reduced by the baffling walls. Even if the dust does no harm, its collection in the baffling chamber will do some good, for it can be sold for 11*s.* a ton.

It would seem as if little or nothing more can be done than what is now attempted to make the destructor work so perfectly that there shall be no nuisance. If this fails, then apparently one of the three following proposals must be adopted. The most radical would be to remove the destructor altogether from its present site. The second solution would be to carry the flue up to the top of one of the surrounding hills and there rebuild the chimney. The third consists of simply increasing the height of the present chimney. The first course would involve an outlay of from £5000 to £7000; but the existing buildings would not be altogether lost, as they might be utilised for a much-needed new electric-light generating station. For the

second proposal there are many examples at Newcastle and other manufacturing towns. There are instances where the flues from manufactories are half a mile in length. The difficulty in the present case is that the neighbouring hills are of solid rock. But it would not be necessary to tunnel this rock. The flue could be built on the surface, which would only need levelling here and there. In regard to the third solution of the difficulty the following extract from the *Torquay Directory and South Devon Journal* of Nov. 6th, 1901, is very much to the point:—

> There is undoubtedly considerable force in the argument that the chimney shaft might advantageously be higher. In order to carry the top well above the surrounding hills the borough surveyor (Mr. H. A. Garrett) originally proposed that the chimney should be 240 feet high. The then Destructor Committee decided, wholly contrary to Mr. Garrett's desire and recommendation, to save £500 by reducing the height of the shaft to 150 feet.

This petty economy has proved disastrous to the town of Torquay and will end in costing much more than the small sum saved. But it has provided a most valuable object-lesson. Had it been done on purpose the town of Torquay might have been crowned with the aureola of martyrdom and canonised as a saint in the annals of sanitation. All large towns are more or less perplexed by the difficulty of getting rid of their domestic, garden, and other refuse. Of late years the impression has taken root that the safest method is to burn it all. But what is the result of such crematory processes? Care is taken to build such tall chimneys that really we cannot tell. To investigate the matter thoroughly it would be necessary to equip one or more captive balloons and let them ascend to the level of the top of the chimney. The town of Torquay has generously saved us all this trouble. The investigator need not imperil his limbs in a captive balloon. There is no need to requisition the services of M. Santos Dumont. Torquay has built its destructor at the bottom of a valley and carefully calculated the height of the chimney, so that its top should be on a level with the houses on the surrounding hills. The investigator can sit in a drawing-room, throw open the windows, and luxuriate while he tests the effects of the destructor fumes blown upon him in a straight line from the top of the chimney. But it does not suffice for one or two persons, whatever their technical competence, just to sniff the atmosphere and to capture and to analyse chemically the fumes. This might be done anywhere with the aid of a balloon, but it would be impossible to persuade an entire population of all ages and conditions to live in captive balloons, so as to see if they would be affected by the fumes of a destructor. In Torquay, however, we have these conditions, for it is not one house but many houses that are situated on a level with the top of the chimney. It may, however, be argued that it is only because they are in a line with the top of the chimney that they suffer. But this still leaves us to infer that the fumes of a destructor are not innocuous and that a nuisance can only be avoided when the fumes are far above the heads of the surrounding population. This is a fact worth knowing, and it could only be demonstrated by an experiment conducted on a large scale. Thus the town of Torquay has unwittingly rendered a great service to the cause of sanitation.



View looking northwards across the Upton Valley, showing the position of the Torquay destructor chimney.

The accompanying illustration, which is reproduced from a photograph, shows how the hills to the north of the destructor dominate its chimney. The hills on the south

side, where the photograph was taken, are covered with houses. The six-inch ordnance map does not give the level of the precise spot where the destructor has been built, but close to it there is a level of 123 and another of 146 feet above the sea. Probably the destructor itself stands on ground about 135 feet above the sea level. Slightly to the north-east and not quite half a mile away there is a level on Windmill Hill put down at 300 feet, and somewhat nearer, but a little to the east, there is Daison Hill, which is also 300 feet high. Adding 150 feet for the height of the chimney to the level on which the destructor is built, the discharge of the fumes probably takes place at an altitude of 285 feet—that is, some 10 or 15 feet below the level of the hill plateaux behind, but to this the height of the trees may be added. To the north-west of the destructor the houses and villas near St. Mary's Church and the Roman Catholic church and convent are on altitudes set down in the ordnance map at 305 feet, 309 feet, and 300 feet above the sea level, and therefore they are all above the top of the destructor chimney. The villa districts to the south and south-west of the destructor, Shirburn-road, Thurlow-road, &c., are 200 feet above the sea level. To reach this district the wind must come over the hills shown in the illustration, by which it is deflected downwards, bringing the fumes straight upon the houses that are a little below the top of the chimney. The distance from the summit of the northerly to the southerly hills is considerably less than a mile and the destructor is built in the hollow about half way between the two ranges. It would be impossible to find a better site, if the object were to test the effects of destructor fumes when thrown direct upon inhabited dwellings. These fumes, I am informed, contain effluvia due to the presence of oils belonging to the paraffin group. These are probably produced by the breaking-up of animal and vegetable matter in the complicated series of action and reaction going on in the furnace. Impure paraffins were found in the flue of the destructor, and if imperfectly burnt they would occasion the smell described as that of a tallow candle. A dirty paraffin lamp burning oil of a very inferior quality would, technically speaking, have been a more correct description. The presence of carbonaceous matter in the dust would be due to the imperfect combustion of the oil. One analysis of the dust collected in the flue sets down the percentage of carbon at 12·80. The large quantities of silica, lime, iron, potash, &c., contained in this dust or grit would account for the irritation of the throat which has been the subject of so many complaints. It is to be hoped that the action of the baffling walls will reduce the prevalence of these symptoms. The placing of a destructor at the bottom of a basin, with houses built on the greater portion of the rim that surrounds the basin and the chimney barely reaching to the height of this rim, provides an excellent opportunity of testing whether the combustion is perfect and the fumes innocuous. So far it is safe to infer that this desirable result has not been attained. As yet it is too soon to say whether the alterations recently made will prove that the destructor can be rendered absolutely perfect. In any case it is a risky experiment, but as it has been undertaken it is for those interested in the problem at issue not to miss such an unparalleled opportunity of studying under the most propitious circumstances this very important problem. The town of Torquay will have rendered great service in helping to decide the question, and those who have suffered during the course of these experiments will have at least the consolation of having contributed to solve a scientific problem in which all towns and large communities are deeply interested.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Royal Infirmary: Annual Meeting.

AT the recent annual meeting of the friends of the Liverpool Royal Infirmary Sir William Banks announced that an important addition was in course of being made to the hospital. The new Royal Infirmary had now been in use for 11 years or more, and so soundly had it been constructed that it had not been found necessary to replace a brick or a beam. The committee at the time of building had been reproached with extravagance regarding the expensive manner in which the walls, floors, and ceilings of the wards had been constructed, inasmuch as they were impervious to all septic influences and beautiful to the eye. But in the end the policy of "thorough" had been justified. Nothing could exceed the healthiness of the building, while its cheerful interior made it a genuine pleasure to work in it. In one point only had it fallen behind. The whole structure and apparatus of surgical operating theatres had altered since the infirmary was built, and new apparatus for sterilising dressings and fluids had been introduced. The large theatre had been constructed on the best model of the day, some 11 years ago, but it had now become old-fashioned, even in that short space of time. A generous friend of the institution was now building, in place of that theatre, two new ones which would be equipped with the most recent improvements. These two theatres, with a small one now in use, would allow each surgeon a theatre for his own use—an advantage not possessed by many hospitals. The treasurer reported that the expenditure for the year was nearly £15,000, whilst the income was under £12,000. The hospital debt stood at £3612, or £780 more than in the previous year, and it would have been considerably larger but for the ex-lord mayor's century fund contribution. 353 more patients had received treatment than in 1900. One bed had been endowed in memory of the late Mr. James Harrison (a former member of the committee) by his family. There were now nine endowed beds in the hospital. Mr. Arthur Earle, the retiring president, announced his donation of 200 guineas to the charity. Two changes had taken place on the medical staff. Dr. T. R. Bradshaw had succeeded Dr. T. R. Glynn as honorary physician and Dr. R. J. M. Buchanan had become honorary assistant physician in Dr. Bradshaw's place.

Unsatisfactory Sanitary Condition of the Infirmary for Children.

The fiftieth annual report of the committee of the Liverpool Infirmary for Children deals with the unsatisfactory sanitary condition of the building. In spite of the care exercised by the medical staff and the prompt removal of any infectious case upon discovery, together with the temporary closing of some of the wards, still the hospital has not been free from outbreaks of scarlet fever and diphtheria during the year 1901. The general health of the staff also has been unsatisfactory. There has been much sickness among the nurses and serious cases of illness have occurred among the resident medical staff. The conclusions drawn from these regrettable occurrences by the committee and the medical staff were that nothing short of a new separate out-patient building and the entire rebuilding of the infirmary itself would enable them to carry on the work of the charity. They roughly estimated the cost of rebuilding at £50,000, and issued an appeal to the citizens for funds towards that object. The treasurer reports that £18,700 have already been promised in response to the appeal, which has enabled them to proceed with the erection of the new out-patient building opposite the infirmary in Mulberry-street. It is the unanimous opinion of all interested that the present site is the best possible for the erection of a new hospital, being very central and abutting upon a large public recreation ground belonging to the corporation which can never be built upon, while in front there is a large open space. The site is high, with a good fall for drains, whilst the foundations are of sandstone. During the year there were 913 in-patients and 13,572 out-patients, involving 53,611 attendances.

Small-pox in Liverpool.

At the meeting of the Health Committee held on Jan. 23rd Dr. E. W. Hope, the medical officer of health, reported that there were 18 patients suffering from small-pox under treatment in the city hospitals. Most of them were cattlemen who had arrived from the United States, but they also included one person from London and another who had crossed Europe and had developed the disease after arrival in Liverpool. At the meeting of the Health Committee held on Jan. 30th Dr. Hope reported that eight cases had been notified during the week ending Jan. 25th, as against three cases in the previous week, and that 17 patients were under treatment in the city hospitals. No deaths had occurred. Three fresh cases were reported on Feb. 4th. The patients in these cases had been in contact with the batch of cattle-men who brought the disease into Liverpool a fortnight ago. As the new cases are traced to the original source the slight increase is not so alarming as if a fresh source of contamination had been discovered.—A discussion took place at the last meeting of the Health

Committee in reference to the conscience clause of the Vaccination Act, 1898. A motion was proposed and seconded in the following terms:—

That it be recommended to the council that a petition be presented to Parliament praying for the repeal of Section 2 of the Vaccination Act, 1898, which exempts from penalty any parent or person who conscientiously believes that vaccination would be prejudicial to the child on the ground that such exemption is a source of danger to the public health.

The motion was withdrawn on the understanding that Dr. Hope would submit to the next meeting of the committee his suggestions for the amendment of clauses of the Act. It is very satisfactory to note that in Liverpool revaccinations are very general and quite spontaneous.

Feb. 4th.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Newport and Monmouthshire Hospital.

THE directors of the Newport and Monmouthshire Hospital have nearly always succeeded in providing a sufficient income to meet their expenditure, and in their report for the year 1901 they state that although it was at first feared that there would be an adverse balance of £165 the committee of the workmen's fund forwarded a contribution of £175, although over £1000 had been subscribed from the same source. If the Cardiff workmen were as generous as their fellows in Newport have shown themselves to be the finances of the Cardiff Infirmary would at once be placed upon a satisfactory footing. Indeed, the workmen's contributions in Newport compare very favourably with those in much larger towns, such as Birmingham or Manchester. Although all the wards in the Newport Hospital are furnished only 56 of the 84 beds are at present in use, but when a sufficient income is assured the unoccupied wards will be utilised. Since the beginning of August, when the new building was opened, the visiting of patients at their own houses has been discontinued. At the annual meeting of the subscribers to the hospital held on Jan. 31st Mr. O. E. B. Marsh, senior honorary surgeon, suggested that a railway ambulance should be kept in readiness to be sent to any part of the county, and £50 were at once subscribed towards its cost.

Prevention of Tuberculosis.

The executive committee of the South Wales and Monmouthshire Branch of the National Association for the Prevention of Consumption and other Forms of Tuberculosis has resolved to ask the local authorities within the area of the branch to adopt by-laws prohibiting, under a penalty, the practice of spitting upon the floors of public rooms and vehicles. The committee numbers amongst its members, not only the town clerk of Cardiff, but all the principal medical officers of health in the district; it is to be presumed therefore that such by-laws would not be *ultra vires*. A suggestion has been made that the convalescent home at Porthcawl, the only institution of the kind in South Wales, should be utilised all the year round for the treatment of cases of tuberculosis of the joints and spine.

Small-pox.

Two cases of small-pox have been reported in Merthyr where there is excellent isolation accommodation, the district council possessing two hospitals in different parts of the town, and one of these with 34 beds is now being used exclusively for small-pox patients.—There are three cases of small-pox at Swansea, the patients being a man and two children.—A case has also occurred in the Hay Rural District on the borders of Brecknockshire. The patient in this instance was a young woman who had been visiting in London.—In the Herefordshire rural districts it has been decided to add chicken-pox to the scheduled list of notifiable diseases and to give public notice of the obligation resting upon householders to notify to the medical officer of health the existence of any cases of infectious disease in their houses.

Shepton Mallet District Hospital.

The annual report of the Shepton Mallet District Hospital, which was established in 1869 and has accommodation for 20 patients, states that the expenditure during 1901 was £395 and that 110 out-patients and 112 in-patients were treated. The average stay in hospital of each in-patient was 18 days; it is evident therefore that the institution is worked economically

Bristol Workhouses.

Mr. R. H. Norgate, resident medical officer of the Stapleton Workhouse, reports that during 1901 there were treated in the infirmary or imbecile wards 664 patients, equal to 34 per cent. of the total number of persons admitted to the workhouse, and that there were 209 deaths. At the Eastville Workhouse, where Mr. F. C. Morgan is resident medical officer, there were 238 deaths during the year among the 740 patients admitted to the infirmary.

Cost of Asylum Patients.

It has been found necessary recently to raise the charge made to boards of guardians for the care of pauper lunatics in the Herefordshire County Asylum to 12*s.* per head weekly. In 1896 the charge was 9*s.*, and the various boards of guardians in the county are very much exercised as to the cause of this increased cost. The Board of Guardians for Hereford, the largest union in the county, has had presented to it a statement giving the weekly cost of maintenance in 10 other asylums, from which it appears that at Worcester it is 7*s.* 7*d.* per head, at Abergavenny (Monmouthshire) 8*s.* 2*d.*, at Northampton 8*s.* 6*d.*, at Gloucester 8*s.* 8*d.*, at Oxford 8*s.* 9*d.*, at Somerset 9*s.* 4*d.*, at Salop 9*s.* 6*d.*, at Wiltshire 9*s.* 11*d.*, at Birmingham 10*s.*, and at Staffordshire 10*s.* 6*d.* In estimating the value of these figures for comparative purposes it must be borne in mind that only one asylum (Oxford) is of the same size as that at Hereford, where there is only accommodation for 500 patients, whereas in the asylums of Worcestershire, Monmouthshire, and Gloucestershire more than double this number of patients can be received. One cause of the increased cost at Hereford may possibly be put down to an outbreak of scarlet fever which recently occurred, involving the isolation of about a dozen attendants and several patients, and in connexion with which the asylum committee was not altogether free from blame in not having provided adequate isolation accommodation in spite of the repeated recommendations to do so by the medical superintendent (Mr. C. S. Morrison) and by the Commissioners in Lunacy.

Appointment of a Female House Surgeon.

At the annual meeting of the subscribers of the Tiverton (Devon) Infirmary held on Jan. 29th the honorary secretary stated that Miss Elizabeth McElney, M.B., Ch.B. Edin., had been appointed house surgeon. He added that in May, June, and October, 1900, and in January, 1901, the committee advertised for several weeks in the medical journals for a resident house surgeon at a salary of £80 per annum. In answer to the first advertisement no application was received; in answer to the second there was one—from a lady; in answer to the third there were three—all from ladies; and in answer to the fourth there were seven—four from gentlemen and three from ladies. The committee appointed each gentleman in turn and each either declined to take the appointment or agreed to do so and failed to carry out his agreement, except the last who arrived and was discharged on the following day. The committee having been without any house surgeon for some months eventually appointed a lady to the post.

Royal United Hospital, Bath.

The annual meeting of the subscribers to this institution was held on Jan. 29th under the presidency of the Mayor of Bath. The medical report stated that 1239 in-patients had been admitted during 1901, as against 1384 in 1900. The out-patients numbered 7994, a decrease of 614 compared with the previous year. The financial statement showed that the total income amounted to £5670, including £1139 from workmen's contributions. Financially the year had been much better than its predecessors, but there still remained an adverse balance of £3374, although £1780 worth of stock had been sold out. The committee made an urgent appeal for more funds and added that unless the income was greatly augmented some of the wards would have to be closed.

Feb. 3rd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Morison Lectures.

THE second Morison lecture of the present series was delivered by Dr. George A. Gibson on Jan. 22nd in the hall of the Royal College of Physicians of Edinburgh. The subject of the lecture was "The Pathogeny and Pathology

of Sensory Affections of the Heart." Under this head the lecturer described the afferent and efferent nerve connexions of the heart and the conditions which bring about the conduction of painful impressions from the heart to the nerve-centres, concluding with a description of the areas of referred pain in connexion with cardiac disease. The third and last lecture of the series was delivered on Jan. 24th, the subject being "The Therapeutics of Sensory Disorders of the Heart." In this lecture Dr. Gibson discussed the various measures and remedial agents which had at different periods been brought forward for the relief of cardiac pain. He showed that treatment was applied in two directions—(1) the alleviation of the paroxysm and (2) the prevention of its recurrence, both being determined by the nature of the underlying pathological condition.

Edinburgh Royal Infirmary: Appointment of Pathologist.

Owing to the appointment of Dr. D. A. Welsh as professor of pathology in Sydney, the post of superintendent pathologist to the Edinburgh Royal Infirmary fell vacant. The managers at their meeting on Feb. 3rd appointed Dr. Theodore Shennan, the senior assistant pathologist, to the vacant post. Dr. Shennan is a graduate of Edinburgh University and a Fellow of the Royal College of Surgeons of Edinburgh. He has been a teacher of pathology in the Edinburgh Extra-mural School for a number of years and at present holds that position in Surgeons' Hall. He formerly held the post of pathologist to Leith Hospital, and for a number of years he has acted as pathologist to the Royal Hospital for Sick Children. He is spoken of very favourably by those who have come most closely in contact with him in his work, and it is generally felt that the appointment ought to prove eminently satisfactory. Owing to the amount of time demanded of the superintendent pathologist in the discharge of his duties he resigns his post at the Children's Hospital and also his post as curator of the museum of the Royal College of Surgeons of Edinburgh. It is understood that the new superintendent pathologist will be allowed to do a limited amount of independent teaching in the extra-mural school.

Professor E. A. Schäfer on the Structure of the Liver.

At a meeting of the Royal Society of Edinburgh held on Feb. 3rd Professor Schäfer of Edinburgh University read a paper on the Existence within the Liver-cells of Channels which can be Directly Injected from the Blood-vessels. He drew attention to papers written by Professor Browicz giving the results of observations on the liver-cells, in which he concluded that in addition to the presence of intracellular biliary excretory channels there were also special afferent nutritive channels in the liver-cells. Professor Schäfer offered objective proof of this contention. He had found specimens in the Edinburgh University physiological laboratory of injected liver from the rabbit which clearly showed the intracellular nutritive canaliculi. On looking further into the matter he found specimens which had been left to the University by the late Professor Rutherford, some of which were apparently of this same rabbit's liver, while others purported to be from the liver of the cat. Some of these were labeled, "Shows injection within liver-cell," and one of them bore the date 1886. Professor Schäfer wrote to Professor E. W. W. Carlier of Birmingham, who at the date indicated was assistant to Professor Rutherford, to find out whether he could furnish any information with regard to the specimens. Professor Carlier wrote in reply that the specimens were injected by Simpson under his direction and used for class purposes, and that he had first noted the canals and had shown them to Professor Rutherford, who, however, would not allow him to publish a note of them. Whatever might have been Professor Rutherford's reason in so acting it was a matter for regret that the fact of the existence of intracellular canals in direct communication with blood-vessels should not have been made public. It was impossible to overlook the importance of the existence within the cells of any organ of vascular canals too narrow to admit blood corpuscles but doubtless capable of conveying the fluid portion of the blood directly to the cell protoplasm.

Small-pox in Glasgow.

The number of patients in hospital in Glasgow is 48. During the last two days six new cases have been admitted and six patients have been discharged.

University College, Dundee.

At a meeting of the Court of St. Andrews University on Feb. 2nd Principal J. Yule Mackay intimated that Sir W. Ogilvy Dalgleish had promised to contribute £5000 towards the completion of the conjoint medical school in Dundee, and the court unanimously resolved to express its appreciation of the great generosity which had prompted the donation and of the wisdom shown in the selection of the object to which it was to be applied. The plans for the new school have now been finally approved, and the work of building is to commence at an early date.—The following appointments to examinerships in the University of St. Andrews are announced:—Chemistry, Mr. H. Mackenzie, Jenner Institute of Medicine, London; physiology, Dr. William Snodgrass; pathology, Dr. T. Shennan.—Dr. W. Barrie Dow has been elected to represent the University at the Fourteenth International Congress of Medicine to be held at Madrid in April, 1903.

Aberdeen Sick Children's Hospital.

One of the most interesting gifts presented to Miss Lumsden on the occasion of her retiring from the post of honorary superintendent of the Sick Children's Hospital is that from the past and present members of the medical staff. It consists of an antique bureau and on the desk is the inscription:—"Presented to Miss K. M. Lumsden, by past and present members of the medical staff of the Royal Aberdeen Hospital for Sick Children, on the occasion of her retiring from the post of honorary superintendent of the hospital after 16 years' service. 31st. Jan., 1901." The gift was accompanied by a signed letter of appreciation from all the members of the staff.

Aberdeen University Senatus.

A meeting of the Senatus was held at King's College on Feb. 1st. It was intimated that the late Surgeon-General Robert Harvey, C.B., D.S.O., Director-General of the Indian Medical Service, who died at Simla in December, had bequeathed a legacy of £5000 to the University of Aberdeen, to be disposed of at the absolute discretion of the Senatus for the purposes of the University. The bequest, however, is not payable until the expiry of certain life interests.

Feb. 4th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

National Association for the Prevention of Tuberculosis.

AT the last meeting of the Executive Committee of the Dublin Branch of the National Association for the Prevention of Consumption and other Forms of Tuberculosis, held at the Royal College of Physicians of Ireland, Sir John W. Moore being in the chair, the honorary secretary was directed to draw the attention of the Public Health Committee to the fact that the system of voluntary notification of tuberculosis at present in force in Dublin has been found to be practically inoperative; that, moreover, the early recognition of the disease can only with certainty be effected by a microscopical examination from which the poorer classes of patients are now practically debarred; and that the remedy which has worked so successfully in New York and which has been adopted in nearly every important town in England and Scotland, as well as on the continent of Europe, should be put in practice here—viz., the establishment of a municipal bacteriological laboratory, not necessarily at any very great expense, where a competent bacteriologist could make the microscopical diagnosis of the specimens of sputum, &c., sent in by the dispensary medical officers and other medical practitioners who work among the poor. The information as to the presence or absence of the specific germ could be sent to the medical man within 24 hours free of all cost to the patient. There was a long discussion and other suggestions were offered to the Public Health Committee.

Royal University of Ireland.

As a result of some extraordinary mistake, or oversight, five of the senators of the Royal University elected by convocation to represent the graduates have become disfranchised. They were last elected on Jan. 17th, 1899, and they should have been apprised of the fact that their re-election must take place on Jan. 17th. No notice, was, however, taken of the matter, no arrangements were made, and, as a result, Sir William Thomson, M.D. (Dublin), His Honour Judge Shaw, LL.D. (Dublin), Rev. Professor Leston,

D.D. (Belfast), Professor Sinclair, M.D. (Belfast), and Mr. Edward Anning, M.A. (Dublin), have for the time no *locus standi* on the Senate, and there is now only one senator, the direct representative of the graduates (Dr. J. W. Browne). It is extremely unfortunate that this should have occurred at present, as on Saturday last (Feb. 1st) important matters relative to extern examiners came before the medical committee, of which Sir William Thomson and Professor Sinclair were members, and the further consideration of the subject is to be brought before the Senate on Feb. 7th.

Diphtheria at Howth and Baldoyle.

At the last meeting of the North Dublin Rural District Council held on Jan. 29th the Local Government Board forwarded a report which they had received from Mr. D. Edgar Flinn, medical inspector, in reference to the continued prevalence of diphtheria in Howth and Baldoyle. It has been decided to close the schools in both of these districts and to adopt various other measures in order to insure the stamping out of the disease.

The Belfast Hospital for Sick Children.

It was reported at the annual meeting of the Belfast Hospital for Sick Children, held on Jan. 31st, that during the year 1901 there were treated in the wards of the institution 684 children, an increase over the previous year of 111. Of these 404 were medical, 269 surgical, and 11 eye and ear cases. 28 deaths occurred—22 in the medical and six in the surgical ward. 272 operations were performed. In the out-patient department 5855 cases—3002 medical, 1153 surgical, 1071 eye and ear, and 629 dental—were treated. 187 children were received into the Convalescent Home. During the year Dr. R. Steen resigned his position as assistant physician, and Dr. R. M. Beatty was appointed in his place. A large class of senior students is as usual attending the hospital cliniques. The staff is most anxious, owing to the increase of intern patients—on many occasions children having had to be refused admission to the hospital, especially to the surgical ward, on account of every bed being filled—that the hospital should be enlarged by an addition being made to each of the wards, but the board of management has for the time being, owing to the state of the finances, thought it wiser to postpone the matter. The average expenditure per patient per day is 7½*d.* The total average cost per bed occupied is £44 10*s.*, which sum is inclusive of expenditure in the extern department. Greatly to the regret of the staff Dr. J. McCaw has been obliged, owing to pressure of work, to resign his position as secretary to the staff, a position which he has occupied to the entire satisfaction of his colleagues for the past 10 years, and Dr. R. R. L. Leathem has been appointed in his place.

Health of Belfast.

From the report presented by the medical superintendent officer of health to the City Corporation of Belfast on Feb. 2nd at the monthly meeting it appears that Belfast is at present in a very healthy condition. Between Dec. 15th, 1901, and Jan. 18th, 1902, 242 cases of zymotic disease have been notified—viz., 69 cases of typhoid fever, 52 of simple continued fever, 41 of diphtheria, 38 of erysipelas, 21 of scarlet fever, 16 of membranous croup, and 5 of puerperal fever. In the five weeks ended Jan. 18th, 974 births were registered in Belfast and 688 deaths, making a natural increase of 286. There were 44 deaths from zymotic disease, 103 from phthisis, and 184 from diseases of the respiratory organs. The annual death-rate from all causes was 20·2, that for children under one year old 3·9, and that for those of 60 years and upwards 3·7 per 1000 of the population. The health of the city of Belfast shows a continued improvement, more especially in the number of cases of zymotic disease notified, as well as in the deaths therefrom, which have fallen from 2·5 for last month to 1·3 per 1000. The deaths from diphtheria and whooping-cough are fewer. So far no case of small-pox has yet appeared in Belfast, notwithstanding the very close and constant communication with various parts of England, where the disease is prevailing—London, Liverpool, &c.—as well as with Glasgow. The weather has of late been extremely cold, with a sharp, biting east wind.

Feb. 4th.

THE DRAINAGE OF TRURO.—At a meeting of the Truro Corporation, held on Jan. 20th, it was decided to submit to the Local Government Board a scheme for the drainage of the city, and to apply for sanction to borrow £21,000 for the purpose.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Predisposition to Tuberculosis.

M. Albert Robin and M. Binet have shown upon previous occasions that 92 per cent. of patients suffering from pulmonary tuberculosis exhibit a very marked increase in their production of carbonic acid, and they now claim to be able to utilise this fact as a means to an early diagnosis of tuberculosis, and, moreover, to be able to say when a person is predisposed to infection by the bacillus of Koch. They communicated the results of their researches to the Academy of Medicine at the meeting held on Jan. 21st as follows. Among the descendants of tuberculous persons M. Robin noted in 60 per cent. of cases an increased consumption of oxygen which revealed the personal predisposition of the patients to tuberculosis. Instead of 5·5, the figure which represents the normal coefficient of the consumption of oxygen, the figure rose to 6·5, or 8 or even 10. In young people who were run down owing to excesses, or in those who were in a state of profound depression from various disappointments the coefficient was 8. In alcoholic patients the figure ran up even to above 10. M. Robin and M. Binet thought that they might apply these facts to therapeutics, and with the idea of discovering therapeutic agents capable of modifying the soil in which the tubercle bacillus would grow (they considered it impossible to act on the bacillus itself) they experimented with some 40 agents commonly used in tuberculosis with a view to investigate their powers as regards the fixation of oxygen in the tissues. For the present they have selected four, the efficacy of which has been known for some time. These agents administered to a healthy man have a remarkable effect in diminishing his power of fixing oxygen in his tissues. In a word, they retard tissue change and make the body into the exactly opposite condition to that which is most favourable for the growth of the tuberculosis bacillus. The therapeutic agents are cod-liver oil, arsenite of potassium, cacodylate of sodium (these two must only be used in normal doses, otherwise they increase tissue change), and rest in the horizontal position. Cold air is good provided that the body be kept warm; a heated air is bad, especially if the body be at the same time chilled. Life at high altitudes has a variable action according to the personal peculiarities of the patient, and the respiratory exchange ought to be studied in a patient at various altitudes in order to find that at which he does best. The same variations hold good for a marine climate. In the course of his observations M. Robin has seen young people in a very feeble and critical state in whom the respiratory coefficient had reached 8, but where by the use of rest and of cacodylate of sodium it came down to the normal figure of 5·5. A respiratory coefficient of 5·5 shows a condition of body inimical to the growth of the tuberculosis bacillus.

Fracture of the Forearm from Starting a Motor-car.

At the meeting of the Academy of Sciences held on Jan. 13th M. Sorel reported some cases of fracture of the forearm caused by starting a motor-car differing from those previously reported, which were cases of indirect fracture of the lower end of the radius by rupture of the anterior carpal ligament. In the case reported by M. Sorel there was a direct fracture at the junction of the lower and middle third of the radius owing to the blow of the crank handle on the external anterior face of the forearm, while at the same time the hand was forcibly extended. Contemporaneously the styloid process of the ulna was torn off. There was thus a direct fracture of the radial diaphysis and an indirect fracture of the lower ulnar epiphysis. There was no obvious deformity of the forearm as the shaft of the ulna, which was intact, served as a splint to the radius.

Obituary.

Dr. Ballay, Governor-General of French West Africa, has just died from diabetes, a disease from which he had been suffering for some time past. He was born in 1847 and commenced professional life as assistant surgeon in the navy. In 1875 he went with Brazza to the Congo. It was this district which he described in his thesis for the doctorate.[1] He was made Chevalier of the Legion of Honour in 1879 and Officier in 1886. He lived in the Gaboon, the Congo, and finally in French Guinea until 1900. He then

[1] L'Ogooé, th. Paris, 1880, pp. 48.

returned to France to rest there when the yellow fever broke out in Senegal and in the Soudan. The Government begged him to organise the necessary hygienic measures at St. Louis-du-Sénégal, and Dr. Ballay started at once. He died in West Africa esteemed by everybody. At the request of the Colonial Minister the Chamber of Deputies unanimously voted a sum of 15,000 francs for his funeral, and his obsequies were celebrated with great state.

Feb. 4th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

The Operative Treatment of Tuberculosis of the Kidney.

THIS formed the subject of an interesting lecture, accompanied by demonstrations on the part of Professor U. Krönlein, at a clinical meeting in Zürich on Jan. 29th. He referred to the first nephrectomy performed by Simon in 1869 in Heidelberg and to the great caution with which for nearly 15 years surgeons approached the region of renal surgery in general. His own experience of the last 20 years had been confined to 120 renal cases with 100 operations, including 50 nephrectomies; 42 of the patients who underwent the operation recovered and only eight succumbed. He gave the opinion of Professor Albert of Vienna, referred to in a manual on surgery in 1885, where the latter says: "I only mention nephrectomy in cases of renal tuberculosis in order to warn surgeons from performing such an operation, which in one case is said to have been successful." Professor Krönlein alluded to his own experiences, which showed a great prevalence of renal tuberculosis, as he had had 38 cases under his care—32 per cent. of all renal cases; 29 of these were operated upon. There were 24 nephrectomies performed, with two fatalities in very severe, acute, and desperate cases with high fever. 22 patients recovered, and in 17 cases a lapse of time of from seven months to ten years had passed since they were dismissed cured as regarded renal symptoms. This went to prove that tuberculosis first attacked only one kidney, and there was also sufficient evidence that the kidney was the primary organ affected among the different organs of the urinary tract (the genitals, the testes, the prostate, the bladder, and the urethra). Only in five cases out of the 38 referred to could no other tuberculous focus be detected clinically, though this did not exclude some hidden localisation of the tuberculous process; generally the lungs were affected. Yet the operation under strict indications was necessary and advisable in order to remove a dangerous tuberculous deposit from the body, even though in two of the nine cases not operated upon the patients ultimately recovered. The 38 cases were observed in patients between the ages of 11 and 50 years, with the following distribution as regarded age: 11 to 20 years, five cases; 21 to 30 years, 17 cases; 31 to 40 years, 11 cases; and 41 to 50 years, five cases. Of the patients 12 were males and 26 were females. The left kidney was diseased in 16 cases, the right kidney in 20 cases, and both kidneys were diseased in two cases.

Puerperal Eclampsia.

At the same meeting Professor Th. Wyder, director of the Lying-in Hospital at Zürich, read a paper on Puerperal Eclampsia. He rejected the theory of infection and referred this alarming and dangerous disease to a partially uræmic, but often purely toxic, agency, the details of which remained still to be discovered. He laid stress on the desirability of examining the urine periodically in all cases of pregnancy, but more especially if symptoms such as headache, nausea, vomiting during the second half of pregnancy, involuntary movements, nervous excitability, loss of memory, &c., were present. This, he said, was of the utmost importance, as with due supervision and proper treatment the illness might be avoided or its dangers lessened. Prognostically much could not be said, as apparently slight cases might terminate fatally and very severe cases might recover. The mortality among mothers, which in pre-antiseptic days used to be 35 per cent., had been reduced to 20 per cent., and an investigation which Professor Wyder instituted, referring to 1100 cases, resulted in the same percentage. Stroganoff's statistics, with only six deaths in 113 cases, were worthy of record and consideration. Prophylactically the patient had to be put on a mild diet, ample excretion by the kidneys, skin, and bowels, had to be ensured, morphine was not to be used, but sometimes bromides might be employed. In actual eclampsia termination of the pregnancy at the earliest possible date was indicated, almost without regard for the infant's life which was in jeopardy owing to the severity of the toxic disease. Hospital supervision was most desirable. In cases of operative interference strictest asepsis must be ensured, hydrargyrum and carbolic solutions must be avoided for irrigation, and all heart toxins, such as chloroform, chloral, morphia, and veratrum, should be used in the smallest possible but still efficient doses. Protracted narcosis might do more harm than good. Stroganoff recommended small doses of morphia with enemata of chloral hydrate. Hot wet packs might prove very beneficial, whilst hot baths might be dangerous—and might induce cerebral hæmorrhage. In some cases venesection with consecutive rectal or hypodermic injections of saline solutions deserved attention, as did inhalation of pure oxygen.

Zürich, Jan. 31st.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Celebration of Professor Murri's Medical Jubilee.

ON Jan. 19th was celebrated at Bologna the professional jubilee of Professor Murri who for 26 years has taught clinical medicine in the university of that city. A large gathering of scientific men from all parts of Italy met to do him honour, many of the other universities, including Camerino, at which he graduated, sending special representatives to take part in the proceedings. These were opened by Professor Albertoni with an eulogistic speech in which Professor Murri's scientific work as well as his services as teacher and consultant, received very high and well-deserved praise. The distinguished Bolognese professor was then presented with his bust and a collection of his works in three handsome volumes. The latter contains many valuable contributions to medical literature, embracing an immense variety of subjects, contributions which were scattered through a great number of medical periodicals until thus brought together by his friends and admirers. Readers of THE LANCET may remember two very able papers by Professor Murri which appeared in these columns some years ago. The first of these, "An Address on Experimental Craniotomy and Diagnosis of Cerebral Abscess,"[1] attracted considerable attention at the time. The other was upon the "Diagnosis of Tumour of the Cerebellum."[2]

Riots at the University of Rome.

The return to his professorial duties at the Sapienza of the socialist deputy, Enrico Ferri, *libero docente* in Penal Law, who was lately expelled from the Chamber of Deputies for disobeying the ruling of the President, has given rise to some lively scenes amongst the University students. An unfortunate expression which escaped the irascible deputy during the recent debate on the state of Southern Italy had been greatly resented by the students hailing from that part of the kingdom and they determined to show their disapproval on the first opportunity. On the day of the opening lecture the municipal authorities, in anticipation of disorderly scenes, had posted a considerable force of police in the streets surrounding the University and had also kept a body of carbineers close at hand to be ready in case of any emergency. This did not prevent a large crowd from collecting, mostly composed of students, but to some extent also of working men, who were present to support the socialist students against those with monarchic sympathies. The appearance of Ferri on the scene was the signal for a general uproar and the two hostile sections from words speedily came to blows, using fists and sticks freely upon one another, but fortunately no more dangerous weapons. Surrounded by a cordon of police and a bodyguard of his sympathisers among the students Ferri with difficulty made his way to the lecture-room and there calmly proceeded with his lecture regardless of the tumult outside. The presence of the police in the precincts of the University was keenly resented by both sections of the students who claim a right of sanctuary within its walls and hold that the municipal authorities exercise no jurisdiction

[1] THE LANCET, Jan. 5th (p. 9), 12th (p. 79), 26th (p. 206), and Feb. 2nd (p. 267), 1895.

[2] THE LANCET, Jan. 30th, 1897, p. 291.

there. So riotous did they now become that many were put under arrest and the others were ordered to disperse under threats of still stronger measures. On the following day protests were made by the students to the Ministers of Education and of the Interior but met with no sympathy. In consequence the disturbances were renewed and continued daily, with the result that the University was closed and its entrances were guarded by the police, bodies of whom were also stationed at the Institute of Anatomy and Pathology and at the Institute of Hygiene. In accordance with a peremptory order from the Minister of Public Instruction the University was again opened on Jan. 28th. In his letter to the rector, Professor Cerruti, Signor Nasi points out that the University cannot be closed for such a cause except for the purpose of depriving the students of the benefit of the examinations, and directs that, should the disorders be repeated within the University, the most stringent measures will be taken not only to restore order but to discover and to punish the delinquents. He adds that in future it is his intention to close the particular course of lectures in which such disorders may occur. So far there has been no renewal of the disturbances since the re-opening of the University. These frequently recurring students' riots at Rome and elsewhere are a source of much trouble and perplexity to the authorities as well as a vexatious interruption to the work of the schools, but they are regarded with considerable amusement, if not sympathy, by the populace and are not looked upon as really serious.

The Fourth International Congress of Obstetrics and Gynæcology.

The International Obstetrical and Gynæcological Society having decided to hold its fourth meeting in Italy, and having entrusted the work of organising it to the Italian Obstetrical and Gynæcological Society, the latter has selected Rome as the seat of the Congress which has been fixed for Sept. 15th to 20th next. The office of honorary president has been accepted by Baccelli and that of president-general by Pasquali. Morisani and Mangiagalli will preside over the obstetrical and gynæcological sections respectively, Pestalozza acting as general secretary. The following are the themes which have been selected for discussion: (1) the medical indications for the induction of labour; (2) hysterectomy in the treatment of puerperal infection; (3) tuberculosis of the genitals; and (4) the surgical treatment of uterine cancer.

Society for Succouring the Asphyxiated.

This society, which was founded in 1880, has for its object the supervision of the Tiber within the city walls for the purpose of saving persons in peril of drowning and providing means for succouring those who in any other circumstances may be in danger of asphyxia. It supplies boats with expert boatmen, gives instruction by lectures and drill to the gendarmes of the Commune in the methods of restoring animation in cases of asphyxia, and offers rewards for acts of bravery done in attempts to save the drowning. In 1901 the society was instrumental in saving 44 lives, in some cases under circumstances so difficult that rewards were bestowed on several boatmen for the bravery they had displayed.

Feb. 1st.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

The late Dr. Spirido Mavrogeny Pasha.

DR. SPIRIDO MAVROGENY PASHA, hakim bashi, or chief physician of the empire and chief physician to the Sultan, died in Constantinople on Jan. 22nd, at the age of 83 years. He belonged to one of the oldest families of Phanar, that suburb of Constantinople to which the Greek patriarchate was transferred after the Turkish conquest. He studied medicine at the University of Vienna, graduated there as M.D., and on his return to Constantinople was at once made physician to the Haidar Pasha Hospital, afterwards receiving an appointment as professor in the Imperial School of Medicine, a position which he held for 25 years. He was also very soon appointed physician to Hamid Effendi, at that time Prince Imperial, and now the reigning khalif or sultan. On the accession of this prince to the supreme power Dr. Mavrogeny still continued to be his medical attendant, and has therefore throughout the whole of his professional life been a court physician—a circumstance which prevented him from acquiring any considerable private practice. He had the rank of general, with a salary of about £T250 (£230 sterling). He was the general inspector of all the military hospitals, exercised control over all medical matters, and was the honorary president of the Imperial Medical Society of Constantinople. He possessed the full confidence of the Sultan and had the honour (which I do not think that any other medical man had) of being a παρακοιμώμενος—i.e., a man allowed to sleep in the vicinity of the Sultan's sleeping apartment. Dr. Mavrogeny was highly educated, being well versed in Greek and Latin literature and familiar with German, French, and English. He contributed both to general and medical literature. As an author he was well known under the pseudonym of "Hermit of Alem Dagh." Among his medical writings mention may be made of those on cholera, leprosy, and rabies. He also edited a medical magazine in Turkish and French, dealing principally with questions of public health. His personal reputation stood very high; he was greatly esteemed by all who knew him, the Sultan included, and most of the medical men in Constantinople were present at his funeral. The deceased possessed many Turkish and foreign Orders. He has left two sons, one of whom was the Ottoman Minister and Envoy Extraordinary at Washington a few years ago, and the other has been Ottoman Consul-General at Marseilles.

Plague.

Cases of bubonic plague now and then make their appearance in Smyrna and Beirut, and the disease has also existed in Baghdad since last November. In the last-mentioned city it has been especially prevalent among the numerous Jewish population; the early cases being of a mild character and not terminating fatally were supposed to be malarial fever with enlargement of glands. An incident of the outbreak of plague in Constantinople was that differences of opinion arose between Professor Nicol and the municipal authorities. Although an expert bacteriologist, he was perhaps not of a very affable temper, and on finding that he was not a *persona grata* he handed in his resignation and went to Paris. Dr. Remlinger, who came to Constantinople as director of the Antirabic Institute, has been appointed director of the Bacteriological Institute in succession to Professor Nicol.

Public Health in Constantinople.

Scarlet fever has been very prevalent here since last spring and according to the statistics published by the International Board of Health from 15 to 20 fatal cases are registered every week. There is no small-pox here at present. Very few sanitary improvements were carried out last year. Probably the most important was the draining of the Greek cemetery at Shishly, where, as indeed is the case throughout the whole of the peninsula on which Constantinople is built, the impermeability of the subsoil causes the rain water to be retained and greatly retards decomposition after interment.

Jan. 31st.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Sixtieth Volume of the "New York Medical Record."

THE *New York Medical Record* was founded in the year 1866, and the year just gone by witnessed the completion of its sixtieth volume. For the 35 years during which it has been in existence the paper has been under the charge of the editor who first launched it on the sea of journalism. There can be no doubt that the brisk rivalry between the various periodicals acts as an incentive to editors and publishers to produce publications which will excel, or at least successfully vie with, their contemporaries. It may be, perhaps, that the business aspect of the matter is too much considered, but the spirit of the times tends to commercialism even in medicine and it would be impossible to conduct a journal on purely altruistic principles. The *New York Medical Record* is an excellent type of a first-class American journal, and it worthily represents in other countries the best features of the school of journalism to which it belongs.

Manner of Action of the Nerves.

Professor Loeb and Dr. Albert F. Matthews announced at the meeting of the American Physiological Society held in

the last week of December, 1901, at Chicago, that they had made an important discovery concerning the nature and manner of action of the human nerves. Both Professor Loeb and Dr. Matthews are attached to Chicago University and have been conducting investigations on the matter during the past summer. Electrical changes in the atoms of the bodily tissue, according to these gentlemen, are responsible for all the active phenomena of life, and these phenomena are not, as hitherto believed, due to food furnishing the tissues and muscles of the body with heat energy. Instead of food furnishing the muscles with heat energy the Chicago investigators declare that it supplies electrical energy, which, after being converted into mechanical energy, is responsible for all the muscular contraction and organic processes of living organisms. The foregoing, of course, is a mere outline and not an adequate description of the new theory, which it must be admitted is as yet only in a tentative stage.

The Carnegie National Institution of the United States.

Mr. Carnegie's offer of $10,000,000 (£2,000,000) to found a national institution in Washington would now appear to have been accepted, although the form of the gift is only indicated as "5 per cent. bonds." An official announcement was made on Jan. 9th that the Board of Trustees had been incorporated under the terms of the gift. Mr. Carnegie's purpose in requesting the various trustees to become members of the board is stated to be as follows:—

> It is proposed to found in the city of Washington, in the spirit of Washington, an institution which, with the coöperation of institutions now or hereafter established there or elsewhere, shall, in the broadest and most liberal manner, encourage investigation, research, and discovery, encourage the application of knowledge to the improvement of mankind, provide such buildings, laboratories, books, and apparatus as may be needed, and afford instruction of an advanced character to students whenever and wherever found, inside or outside of schools, properly qualified to profit thereby.

One of the prominent aims of this institution is to be the promotion of original research and to ensure the prompt publication and distribution of the results of scientific investigation. The fact that Dr. John S. Billings of New York, the well-known bacteriologist, has been appointed one of the trustees would seem to be a guarantee that medical and scientific research will receive due attention.

Award of the Gross Prize of $1000.

The Philadelphia Academy of Surgery, as trustee of the Samuel D. Gross prize of 1000 dollars for original research in surgery, has awarded this prize, after six years' interval, to Dr. Robert H. M. Dawbarn of New York city. The treatise which won the competition was entitled "The Treatment of Certain Malignant Growths by Excision of both External Carotids." Upon this topic Dr. Dawbarn has worked as opportunity served for seven years past. The essay when published will contain the histories, with pathologist's report in each instance confirming diagnosis of malignancy, and specifying its variety, of 40 carotid extirpations by the author himself, and as many additional by about a dozen other surgeons. At least two of these are members of the Philadelphia Academy of Surgery. By the terms of Dr. Gross's bequest the prize essay must be published in book form and a copy thereof must be deposited in the Samuel D. Gross Library of the Philadelphia Academy of Surgery. Dr. Dawbarn was born in 1860 and graduated in 1881 from the College of Physicians and Surgeons in Philadelphia. He is now Professor of Surgery in the New York Polyclinic College and visiting surgeon at the City and Polyclinic Hospitals.

Tetanus after Vaccination.

According to the official report of the Board of Health of Camden, New Jersey, concerning 11 cases of tetanus after vaccination in that city, the investigation established the fact that all the virus used was free from tetanus, as shown by the State bacteriologist. Tests were made on rats by physicians from Cooper Hospital, and in none of those instances did tetanus, which was then acute, occur until three or four weeks after vaccination. During the past three months in Philadelphia from 700,000 to 800,000 persons have been vaccinated with the same kind of virus as was used in Camden and not a case of tetanus has occurred. The cases of this disease found prevalent are ascribed to a long period of dry weather with high winds and to a lack of proper care of their vaccination wounds on the part of the patients.

Deportation of Consumptives.

A case has occurred to test the constitutionality of the Treasury ruling that consumptives shall be prevented from landing in this country as immigrants. A man and his family arrived in New York on Nov. 9th and friends met them and guaranteed that they should not become public charges. The authorities, however, refused to allow the man to land as, upon examination by the Marine Hospital physicians, he was found to be suffering from pulmonary tuberculosis. He was ordered to be deported, but a lawyer obtained a writ of *habeas corpus*, and the man is now in the Long Island Cottage Hospital in Brooklyn. The Act of Congress on which he is detained was intended to exclude idiots, insane persons, paupers, criminals, and persons suffering from a loathsome or dangerous contagious disease.—The New York Academy of Medicine has had under consideration the ruling of the Secretary of the Treasury in regard to tuberculous immigrants and has taken ground in opposition as follows: "The Academy of Medicine deeply deplores the decision of the Secretary of the Treasury which is not based either on clinical experience or on scientific experiments; and considers the exclusion of non-pauper immigrants and consumptive aliens visiting our shores unwise, inhuman, and contrary to the spirit of American justice. While the Academy upholds the fact of the communicability of tuberculosis and urges all possible precautions against the spread of the disease from the sputum and other tuberculous secretions, or from the ingestion of tuberculous food substances, it is opposed to all measures by which additional hardship is imposed upon the consumptive individual, his family, or his physician."

Jan. 24th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Plague.

ANOTHER and fatal case of plague has occurred in Sydney. Rats have also increased in numbers and hundreds of them, killed in different parts of the metropolitan area, were found to be affected with plague. Both the Government and the municipal authorities have instituted a vigorous crusade against the rodents. The sewers have been flushed and fumigated and business premises have been disinfected. In the measures taken some delay occurred owing to divided authority; some steps have to be taken by the Government and Board of Health, some by the municipal council, some by the Water and Sewerage Board, and some by the Harbour Trust. The Mayor of Sydney claims that he should be made responsible for concerting the necessary action, but surely the Board of Health ought to be the proper authority. In Brisbane another case of plague has occurred, and there and in all the States precautions against the spread of the disease, and especially by the destruction of rats, have been vigorously prosecuted.

Infectious Diseases.

New and stringent regulations regarding precautions against infectious diseases have been issued in New South Wales, especially as to the disinfection of houses, the sending of children to school, and the transport of patients.

Inquiry at Kew Asylum.

Reference has frequently been made in these columns to the unsatisfactory condition of the hospitals for the insane in Victoria. A recent inquiry into a charge of alleged neglect of a paying patient at Kew Asylum has emphasised the urgent need for reform. The acting medical superintendent in his evidence before the Inquiry Board stated that he was practically in charge of 450 male and 415 female patients and a staff of 130 attendants, and had practically to attend personally to the whole of the male patients, having only a temporarily appointed junior medical officer to assist him. None of the nurses in the asylum were certificated and there had been no head nurse for 18 months. No nursing standard was required from the matron. Very little difference was made in the treatment of paying and non-paying patients, as the medical officers did not know whether they paid or not. Both classes when violent went to the same refractory ward. The superintendent said that he would like to alter many of the present arrangements, but to do so entailed alterations in the structure of the buildings. In one ward 23 patients slept and six had beds on the floor because there was no room for bedsteads. The single

rooms were practically unventilated. He had asked three times for certain necessary alterations in the sanitary arrangements, but without success. The general staff of attendants was sufficient in numbers, but not sufficiently trained. Working an asylum under the Public Service Board was not conducive to the best treatment of patients. Dr. McCreery, the inspector-general of asylums, corroborated this evidence and said that the principle of appointment by seniority adopted by the Public Service Board blocked the way of reform, and he had repeatedly reported that "the patients were not receiving the care and attention to which they were entitled." The asylum was overcrowded by 200 or 300 patients. The present arrangements were very unsatisfactory. The Board reported that the specific charges of neglect in the particular case for inquiry had not been substantiated, but that the relatives of the patient had grounds for preferring them, and in so doing had discharged a public duty, as they involved the larger question of the general management of the asylum, and it found the following to be conclusively proven :—

Pay patients are not kept separate from other patients, either in wards or yards. Paying and non-paying patients alike do not receive the accommodation or treatment that is necessary. There is practically no attempt made to separate curable from incurable patients. The yards generally are overcrowded and so few in number that proper classification and separation of patients are impossible. This is specially the case on the male side, where for some reason two yards are, and have long been, kept empty. The wards and dormitories generally are also overcrowded and are used in many cases for purposes for which they were not constructed or intended. The hospital wards are utterly unsuited for hospital purposes. Ventilation generally, especially in the lower wards, is bad, chiefly owing to structural defects. The equipment and appliances for curative purposes are little better than rudimentary. In the hospital sense of the term, there is no nursing staff. A large proportion of the attendants have not been specially selected or efficiently trained. The present indoor system of training has broken down and the proportion of probationers is excessive. Bruises and abrasions of patients are numerous and restraint is relied upon to an extent that has long been discarded in English asylums. All promotion throughout the asylum is by seniority and is in no way dependent on proven merit. The medical staff is underpaid and insufficient for the work that it has to perform. Its *personnel* is constantly changing. The result is that, as the inspector has reported, the purely medical treatment cannot be deemed satisfactory. There is immediate need that the management of the asylum should be withdrawn from the control of the Public Service Board and placed, as has been done in America with beneficial results, under the control of trustees or commissioners. There is immediate need that the medical superintendent should be rendered supreme in authority and responsibility in his individual asylum. There is immediate need of the establishment of a pay asylum entirely separate from any present public asylum. There is immediate need of the appointment of a large number of trained nurses, of an increase in the medical staff, and of additional equipment and appliances for curative purposes. There is immediate need of the withdrawal of the asylum from the control of the public works department, so far as alterations, construction, and sanitation are concerned, and of its being placed under some specially qualified and competent officer. It is only fair to add that the errors and defects which have been so prominently made public during the present inquiry have already been brought repeatedly under the notice of the department by the inspector of asylums and the official visitors in their official reports.

Hospital Affairs.

The directors of the Sydney Hospital have decided to make a very important alteration in the present system of receiving patients. The practice for many years past has been to exact a payment (of 5*s.*, 10*s.*, and 15*s.*, but not exceeding £1 1*s.*, per week) from patients. Those who declared their inability to pay anything were sent to the board of health where they received a "pauper order" which admitted them to the hospital and ensured the repayment to the hospital by the Government of the approximate cost of their maintenance and treatment. The directors now propose to abolish all charges for patients and to make the institution "a public hospital for the free medical and surgical treatment of the sick and necessitous poor, with or without recommendation." The directors estimate that about £1600 per annum will be lost from the income of the hospital by this step, but boxes will be placed in each ward for voluntary contributions from patients and their friends, and, in order to prevent abuse, a stricter system of interrogation as to the financial position of applicants will be instituted. The reasons for the change are that many of the contributing patients conceive that they are paying full value for the services rendered and are not in receipt of charity, and that the officers of the hospital are their paid servants. On the other hand, the really necessitous are put to unnecessary inconvenience and humiliation in having to obtain a Government pauper order. At the last meeting of the board of directors it was also reported that the Morcliff site of the eye department would probably be in possession of the hospital for another five years, and the board thanked the ophthalmic surgeons for the trouble which they had taken in securing a suitable site.—The financial position of the Melbourne Hospital has recently formed the subject of an exhaustive report prepared for the *Argus* newspaper. It was found that the different Australian hospitals adopted such different systems of keeping their accounts that it was difficult to compare them. The total cost of maintenance per bed occupied was £74 11*s.* 5*d.* at the Melbourne Hospital, or £10 4*s.* 3*d.* above the average of all the leading Australian hospitals, the extra cost being on the items of provisions, alcohol, surgery and dispensary, and domestic expenses. The increased cost is ascribed to the more serious nature of the cases treated—especially the large number of infectious cases, and particularly diphtheria. It is recommended that the expenditure on infectious cases shall be kept in a separate account and that the expenditure on out-patients shall also be in a separate account from that on in-patients. The report says that the present income of the Melbourne Hospital is inadequate to enable it to carry on its duties as at present ; that additional financial support is requisite, both from the Government and the public ; and that the Government grant should never have been reduced as it was some years ago.

The Coast Hospital, New South Wales.

The select committee appointed to inquire into the circumstances of the removal from the service of the late assistant storekeeper at the Coast Hospital, Sydney, has presented a report to the Legislative Assembly. It finds that the late assistant storekeeper was an energetic and painstaking officer and that he acted rightly in refusing to relax his scrutiny over the receipt of stores ; that the action of the President of the Central Board of Health showed a carelessness or credulity almost incredible ; and "that the admissions of the medical superintendent that the diet-sheets specify when two classes of goods are contracted for the low-grade foods are to be supplied to the patients and the high-grade to the staff, is a further proof of the incapacity of the President of the Board of Health to administer his department."

Sydney Dental School and Hospital.

The new dental school and hospital in connexion with the Sydney University was formally opened by Mrs. See, wife of the Premier of New South Wales. Professor Anderson Stuart explained the steps that had led up to the establishment of the school and the need for it, but said that the university was not anxious to continue it.

The Right of a Medical Man to Practise as a Chemist.

On Dec. 13th, 1901, Mr. Andrew Honman, was charged with carrying on business as a chemist, though not a registered chemist. It appeared that Mr. Honman was one of the executors of the will of the late Mr. Blackett, a chemist, and in the capacity of executor he carried on the business, having as a partner a man who was a duly qualified chemist and who really conducted the business. Mr. Honman acted solely in the interests of Mrs. Blackett and her family. A great deal of correspondence had passed between the Pharmacy Board and Mr. Honman, and finally when the board threatened proceedings Mr. Honman told the board to proceed, as he relied on his right as a Licentiate of the Society of Apothecaries to practise pharmacy. The case was dismissed, with 10 guineas costs against the board.

Victorian Trained Nurses' Association.

The report of the council of the Victorian Trained Nurses' Association read at its first annual meeting showed that it was already a success, having 260 members. The association had been recognised by the Nurses' Association in Sydney and by the Government of New South Wales, so that members of the association were eligible for hospital appointments in that State. The financial statement showed a credit balance of over £100.

Broken Hill Medical Institute.

At a meeting of the Broken Hill Friendly Societies' Council it was stated that the medical institute was not a success and would have to be closed. Owing to the opposition of the local medical men the committee had difficulty in securing suitable medical officers. This is another victory for the profession in the "Battle of the Clubs."

Obituary.

Mr. F. W. Elsner, F.R.C.S. Irel., was found dead in his bed at Morn, New South Wales, where he had practised for

the last seven years. An inquest was held and the medical evidence was to the effect that the cause of death was heat apoplexy.—Mr. W. H. Tibbits, the oldest medical practitioner in the Western District of New South Wales, died at Dubbo recently. He had resided in that town since 1857, was connected with many of its public institutions, and was the oldest magistrate in the district.—Mr. T. L. Holthouse, who had practised in Ballarat, Victoria, for 40 years died on Dec. 9th, 1901. He was 82 years of age and was most highly esteemed. For 31 years he was medical officer to the Ballarat Benevolent Asylum.—Dr. Joseph Stapleton, of Wallsend, New South Wales, was found dead in the bush on Dec. 12th, 1901. He left home on horseback to go on a professional round and is supposed to have had an apoplectic attack. He was a native of Ireland, was 45 years old, and was unmarried. He was very charitable and popular, though somewhat eccentric.

Jan. 1st.

Obituary.

HENRY LANKESTER, M.R.C.S. ENG., L.S.A.

THE death took place on Jan. 30th, at his residence, Salisbury-road, Leicester, of Mr. Henry Lankester. The deceased gentleman, who was born in 1825, was a native of Poole, and went to Leicester in 1854. Subsequently he became a partner with the late Dr. Macaulay, and on that gentleman's death he started practice on his own account. For a considerable period he was surgeon to the Midland Railway Company for the Leicester and Rutland District, and he was held in the highest esteem by his professional brethren. In 1879 he became a member of the Leicester Town Council and in 1890 he was elected mayor of the borough, being in the same year raised to the aldermanic bench. In 1892 he was made a justice of the peace, and although on the extension of the borough boundaries he retired from the town council he nevertheless continued to take a deep and practical interest in local public affairs. He was President of the Leicestershire Band of Hope Union, a contributor to numerous agencies which had for their object the general well-being of the community, and, as a total abstainer, an ardent supporter of the temperance cause. Lately he had been in failing health and some few weeks ago he had a seizure, since when his recovery had been despaired of. The deceased married, in 1861, Miss Squire of Royston, Cambridge, by whom he had seven children—six sons and a daughter. The eldest son is physician to the Church Missionary Society. The funeral took place at the Leicester Cemetery on Feb. 3rd, amid many manifestations of the high esteem in which the deceased gentleman was held. The Mayor of Leicester and many members of the town council and other public bodies attended.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Axel Key, one of the most eminent of Swedish medical men. He was born in 1832 and after studying in Lund qualified in 1852. Later he went to Germany and worked under Max Schultze in Bonn and Virchow in Berlin. After his return to Sweden he was appointed to the chair of Pathological Anatomy in the Caroline Institute, Stockholm, and was the first editor of the well-known *Nordiskt Medicinskt Arkiv*. He published in conjunction with Dr. Retzius researches on the Structure of the Nervous System. He also worked at the pathology of the heart and was much interested in school hygiene. He retired from active work about five years ago.—Professor Luigi Chiminelli of the University of Rome.—Dr. Hugo Pernice, formerly Professor of Gynæcology in the University of Greifswald, a post which he held from 1858 to 1899. He was a native of Halle and studied medicine there, in Prague, and in Greifswald.—Dr. Destrée, Director of the Second Medical Clinic in Brussels, at the age of 43 years.—Dr. F. J. Soupart, formerly Professor of Clinical Surgery in the University of Ghent and Belgian Senator. His age was 91 years.—Dr. Bosdorff, Vice-President of the Berlin and Brandenburg Medical Society, at the age of 68 years.—Dr. Eduard Cramer, Extraordinary Professor of Hygiene in the University of Heidelberg. He was in his thirty-ninth year and was the son of Dr. Heinrich Cramer, Professor of Psychiatry in Marburg.—Dr. Louis Kagelmann of Hanover, at the age of 74 years. He was an active politician of the Social Democrat school.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At the congregation on Jan. 30th the following medical and surgical degrees were conferred:—

M.B.—A. H. Grey and A. C. Hudson, Trinity; R. G. Abercrombie, Caius; A. B. Dunne, Queen's; and A. P. Bowdler, Sidney.
B.C.—A. C. Hudson, A. B. Dunne, and A. P. Bowdler.
Dr. W. E. Dixon was admitted to the degree of M.A. *honoris causa*.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Moritz Elsner, of the Infectious Diseases Institute, has been granted the title of Professor. Dr. Oskar Spitta has been recognised as *privat-docent* of Hygiene.—*Bonn:* Dr. M. zur Nedden has been recognised as *privat-docent* of Ophthalmology.—*Florence:* Dr. Gaetano Pieraccino has been recognised as *privat-docent* of Medical Pathology.—*Moscow:* Dr. Levshin is retiring from the chair of Clinical Surgery. His successor will be Dr. Zhakonoff, Professor of Operative Surgery. Dr. Krinkoff has been promoted to an Ordinary Professorship of Ophthalmology. Dr. Speranski has been recognised as *privat-docent* of Dermatology.—*Munich:* Dr. Martin Hahn, *privat-docent* of Hygiene, and Dr. Adolf Schmitt, *privat-docent* of Surgery, have been promoted to Extraordinary Professorships.—*Pisa:* Dr. Pinzani has been promoted to the Professorship of Clinical Midwifery.—*San Francisco:* Dr. L. Newmark has been appointed Professor of Neurology.—*Valencia:* Dr. J. Bartrina y Capella has been appointed Professor of Topographical Anatomy.—*Vienna*: Owing to the approaching retirement of Dr. Krafft-Ebing from the chair of Psychiatry several changes and promotions will take place. His successor will be Professor Wagner von Jauregg, Director of the First Psychiatric Clinic in Vienna. Dr. Anton will be brought to Vienna from Graz, Dr. Mayer, Professor at Innsbrück, supplying his chair, while Dr. von Sölder, now first assistant to Professor Krafft-Ebing, will migrate to Innsbrück to take charge of the psychiatric clinic there. Dr. Karl Kreibich has been recognised as *privat-docent* of Dermatology. A new bacteriological laboratory with an installation of the most modern description is to be erected in Professor Gruber's University Hygienic Institute. Dr. R. Kretz, *privat-docent* of Pathological Anatomy, has been promoted to an extraordinary professorship.

DEATH AFTER AN ILLEGAL OPERATION.—On Jan. 31st, at the Deptford Congregational Hall, an inquest was held on the body of a woman, aged 29 years, who died from blood-poisoning supposed to be due to an attempt by another woman to procure abortion. In the course of the evidence it was stated that the alleged abortionist had advised her victim not to call in a medical man, as it would get her (the abortionist) into trouble. If, however, she were compelled to call in medical assistance she was to say that her injuries had been caused by fighting with another woman. The coroner's jury returned a verdict of "Wilful murder" against the woman who performed the illegal operation.

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY.—The President and Council of this society gave an enjoyable smoking concert and conversazione at the Great Northern Central Hospital recently. The out-patient hall, the use of which had been granted by the hospital committee, had been decorated with flags and flowers, and made an excellent reception-room. There was a large attendance, amongst those present being Mr. N. Brander Baker, Mr. Fraser Black, J.P., Mr. Watson Surr, J.P., Dr. Basil G. Morison, Dr. G. de B. Watson, Dr. A. Whitfield, Mr. Peyton T. R. Beale, Dr. Samuel E. Dore, Mr. Macready, Dr. Atkinson, Councillor Dr. W. A. Malcolm, Dr. Glover, Dr. J. Crabb, Mr. T. A. Cambridge, Mr. Mower White, Dr. Robinson, Dr. L. Freyberger, Dr. G. F. Blacker, Mr. T. H. Purvis, and Dr. Walsham. During the evening

music was provided by Mr. Hahn, the well-known pianist, and by Mr. Harold Loch, violinist, and capital songs were given by Mr. Kendal Ward, Dr. Malcolm, Dr. Arthur W. Wilson, Dr. Watson, Mr. Baker, and Mr. Glenton-Kerr.

NOTIFICATION OF CHICKEN-POX.—At the meeting of the Radstock (Somerset) Urban Council held on Jan. 24th, at the suggestion of the medical officer of health it was decided to include chicken-pox in the list of notifiable diseases.

BEQUESTS TO HOSPITALS.—The late Mr. Henderson of Bodmin has bequeathed £1000 to the South Devon and East Cornwall Hospital, Plymouth.—By the will of Miss Joyce Jane Lunell of Chiculdale, Montpelier, Weston-super-Mare, £1000 are bequeathed to the Weston-super-Mare Hospital.

BRISTOL NATURALISTS' SOCIETY.—The annual meeting of this society was held on Jan. 23rd at University College, Bristol. After the business had been transacted Dr. A. B. Prowse, the re-elected president, read an interesting paper descriptive of Some Botanical Photo-micrographs of Common Objects. The meeting terminated with a hearty vote of thanks to Dr. Prowse for his services in the chair during the preceding year and also for his paper.

REDRUTH RURAL DISTRICT.—Dr. A. E. Permewan, the medical officer of health of Redruth (Cornwall) Rural District, in his annual report for 1901 states that 496 births (26·9 per 1000) and 331 deaths (18 per 1000) were registered. He makes a reference to an increase in the number of deaths from phthisis, several of them having occurred in miners who had returned from working boring machines in South Africa.

MANCHESTER INFIRMARY.—At the meeting of the board of management of the Manchester Infirmary held on Jan. 27th the rebuilding of the infirmary on the present site was accepted as feasible, if some other than the pavilion plan were adopted. The committee of the board appointed to consider the matter had been instructed to obtain plans and estimates for a new hospital to be built on the present site. They are to be submitted to the board at an early date, and, if approved, a special meeting of the trustees is to be called to consider them. "They desired that a new hospital should be provided ..... upon the best principles and in every way worthy of Manchester, and in that desire they had, they were glad to say, the cordial sympathy of the medical staff." The committee further says that it cannot be done unless the trustees and the public generally subscribe largely. It remains to be seen whether this scheme will be warmly taken up or not. It is not beyond criticism.

BANQUET TO DR. W. T. EDWARDS OF CARDIFF.—On Feb. 1st Dr. Edwards was entertained by his professional brethren in the town and district of Cardiff to a banquet in commemoration of the jubilee of his association with the medical staff of Cardiff Infirmary. The banquet was held in the Royal Hotel, Cardiff, under the chairmanship of Dr. W. Taylor, and there was a very large attendance. The Chairman, in proposing "Our Guest," said that Dr. Edwards was one of the original promoters of, and subscribers to, the University College of South Wales and Monmouthshire. In 1885, on the occasion of the visit of the British Medical Association, he was the president, and that Association was never better entertained anywhere than at Cardiff. They also, he added, considered their guest the founder of the Cardiff Medical School, of which he was a generous supporter. The toast was drunk with musical honours.

THE annual dinner of the British Gynæcological Society took place on Wednesday evening, Jan. 29th, at the Café Monico, when there was a large gathering of Fellows and guests. The retiring President of the society, Dr. J. A. Mansell Moullin, presided, and among those present were Surgeon-General W. Taylor, C.B., the Director-General of the Army Medical Department, Professor Clifford Allbutt, Mr. W. Watson Cheyne, C.B., Sir James Crichton-Browne, Sir T. J. Gallwey, K.C.M.G., C.B., and Dr. Robert Barnes. Several ladies were present and the hearty reception of the toast of "The Ladies" showed the appreciation with which the Fellows acknowledged the innovation. The toast of "The British Gynæcological Society" was proposed by Sir J. Crichton-Browne in an amusing and witty speech and was responded to by the chairman. The toast of "Our Honorary President" was proposed by Dr. H. Macnaughton-Jones and was responded to by Dr. Robert Barnes. Dr. W. H. Bourke kindly undertook the supervision of a successful musical programme.

A TOWN COUNCIL VACCINATED.—At the meeting of the Helston (Cornwall) Town Council held on Jan. 30th the mayor and all the members of the corporation decided that they would be revaccinated at once as an example to their townspeople, and that posters should be distributed about the town informing the public that they could be vaccinated or revaccinated free of charge.

COMPLIMENT TO A MEDICAL OFFICER OF HEALTH.—At the meeting of the Barnstaple Town Council held on Jan. 27th it was unanimously decided to record the council's high appreciation of the admirable manner in which the late medical officer of health (Dr. Mark Jackson) had performed his duties and it was stated that through his insistency the Infectious Diseases Notification Act was adopted in Barnstaple.

REVACCINATION AT SWANSEA.—At the meeting of the Swansea Board of Guardians held on Jan. 31st one of the public vaccinators reported that he could not cope with the large amount of persons who wished to be revaccinated at his residence. On Jan. 30th he revaccinated 170 people, and hundreds had to be turned away. The other public vaccinator reported in a similar sense. It was decided to open stations for revaccination, the hours being fixed to suit the working-classes.

SOUTH DEVON AND EAST CORNWALL HOSPITAL CLINICAL LABORATORY.—The work in this laboratory from June, 1901, to January, 1902, included 155 examinations of clinical and post-mortem pathological specimens. Among these were examples of actinomycosis of the peritoneum, spleno-myelogenous leukæmia, forms of anæmia, the serum and sero-sedimentation diagnosis of enteric and undulant fevers, gonorrhœa, tuberculosis, diphtheria, blood counts, and hæmoglobin estimations. The histo-pathological work included specimens of some rarity—e.g., a duct cancer and a large-celled sarcoma with intra-cystic growths of the mamma, tuberculous pyosalpinx, lymphadenoma of the abdominal type, adenomyxoma of the parotid region, hydatid "membrane," an enormous diffuse pigmented "sarcoma" of the liver and varieties of sarcomata, epi- and endotheliomata, &c. The number of histological, chemical, and bacteriological examinations made appears to testify to the utility of this department to the hospital.

PRESENTATIONS TO MEDICAL PRACTITIONERS.—Mr. W. Bl ck Jones, M.D., B.S. Lond., D.P.H., was on Jan. 17th presented with a framed engraving, "The Doctor," by the nursing class in connexion with the Beulah (Breconshire) Centre of the St. John Ambulance Association.—On Dec. 26th, 1901, after dinner on board the P. and O. steamer *Peninsular*, the chairman of the Sports Committee, on behalf of the passengers, presented the ship surgeon, Mr. A. W. D. Hunt, L.R.C.P. Lond., M.R.C.S. Eng., with a silver paper-knife and bookmarker suitably inscribed, an ancient seal of Aryan design and Hindoo workmanship, and a silver matchbox, as a mark of respect and esteem.—On Jan. 18th, at Gunnislake, Cornwall, after the distribution of medallions and certificates to the successful candidates of the Gunnislake branch of the St. John Ambulance Association, the members of the class presented Mr. Albert Bowhay, L.R.C.P. Lond., M.R.C.S. Eng., D.P.H. Cantab., with a silver cigarette case as a mark of appreciation of his services as honorary lecturer.

THE ROYAL INSTITUTION.—The Friday evening discourse at the Royal Institution on Jan. 31st was delivered by Professor A. Crum Brown, professor of chemistry in Edinburgh University, the title of his address being the Ions of Electrolysis. He commenced with a reference to the polarisation of electrodes, a phenomenon which was for a long time unexplained but was at last shown by Schönbein to be due to the electrodes becoming covered with a thin film of the products of electrolysis. He then gave an outline of the gradual development of the theory of ionisation which originated with Faraday and was extended by Clausius, Hittorf, Kohlrausch, van't Hoff, Arrhenius, Principal Lodge, and others. According to the theory of ionisation, an electrolyte dissolved in water is dissociated into ions—a metallic chloride, for instance, being

dissociated into a metal (anion) and chlorine (kation). When an electric current passes the anions and kations are assumed to travel in opposite directions towards the kathode and anode respectively. To illustrate this migration of the ions Professor Crum Brown made an experiment in which solutions contained in a narrow U-tube were shown on the screen. A crimson column of potassium permanganate was interposed between colourless columns of (1) potassium nitrate solution and (2) potassium nitrate solution made dense with urea (a non-electrolyte). When an electric current was passed the crimson column moved slowly. Several other experiments were also shown.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Mr. Broadhurst's Vaccination Bill.

THE Vaccination Bill introduced by Mr. Henry Broadhurst is a very simple measure. In one short enacting clause it proposes to abolish compulsory vaccination.

Vaccination Bill in the House of Lords.

Lord Newton has introduced a Bill in the House of Lords to repeal the conscientious objectors clause in the Vaccination Act of 1898.

HOUSE OF COMMONS.

THURSDAY, JAN. 30TH.

Tuberculosis in the Postal Service.

Sir WALTER FOSTER asked the Secretary to the Treasury, as representing the Postmaster-General, whether the Postmaster-General had had his attention drawn to the report of the Association of British Postal Medical Officers on the prevalence of tubercle among postal employés and to the summary of preventive measures drawn up; and whether the Postmaster-General was prepared to adopt the measures therein set forth for the more effective prevention of tuberculosis among the staff of the Post Office.—Mr. AUSTEN CHAMBERLAIN replied: The Postmaster-General received the report referred to in due course. Some of the preventive measures suggested in it were already in operation and others that have been found practicable have been adopted. Statistics supplied by the Registrar-General show that the rate of mortality from phthisis and cognate diseases between the ages of 15 and 65 years is much greater in the country at large than amongst the established employés of the Post Office; and there is no reason to think that persons in the Post Office Service are more subject to these diseases than others.

Vaccination Statistics.

Mr. CORBIE GRANT asked the President of the Local Government Board whether he was aware that the Metropolitan Asylums Board had repeatedly declined to supply information as to the names and addresses, ages, and conditions as to vaccination of all small-pox patients treated in their hospitals, although they were required to give this information by Section 8 of the Vaccination Act, 1898, and whether children born in these hospitals and duly vaccinated and afterwards dying from small-pox were included in the statistical tables of the Metropolitan Asylums Board among unvaccinated cases.—Mr. LONG replied: The section mentioned by the hon. Member does not apply in the case of a small pox hospital maintained by the managers of the Metropolitan Asylums district, as the managers are not a sanitary authority within the meaning of the section. I am, however, informed by the managers that a register similar to that described in the section is, in fact, kept at the hospital ships, but that only two persons have made application to inspect it. The reply of the managers to these applications, which, it appeared, were made on behalf of the National Anti-Vaccination League, was to the effect that arrangements would be made for the register being produced, assuming that the person wishing to inspect was prepared to comply with the regulations of the managers and to satisfy the medical officer before entering the ships that he was adequately protected against contracting small-pox. With regard to the last part of the question, it is the practice of the managers to classify as unvaccinated any person who was already infected with small-pox before vaccination was performed. I understand that no birth took place in the small-pox hospitals of the managers last year and that this year there have been only three births.

The London Water Bill.

Mr. LONG introduced at this sitting of the House the Bill of the Government for the establishment of a Water Board for the supply of water within London and certain adjoining districts and for the transference to this board of the undertakings of the metropolitan water companies. He explained that the Government had decided to take the sanitary authorities of "Water London" and to make it their duty to select representatives who would form the proposed Water Board. The sanitary authorities selected were the metropolitan boroughs and the City of London, the urban sanitary districts of the outside areas, the London County Council, and the county councils of the adjoining metropolitan counties. There were 28 metropolitan boroughs. Six of these—Islington, Kensington, Lambeth, St. Pancras, Stepney, and Westminster—would have two members on the body and the others one member each, the London County Council would have 10 members, the Common Council of the City of London would have two members, the Council of the Borough of West Ham two, the councils of East Ham, Leyton, and Walthamstow one each, the county councils of Kent, Middlesex, Surrey, and Hertfordshire one each, and the Conservancies of the Thames and the Lee one each. The outside urban districts would be grouped and each group would be represented by one member on the proposed board. There would be a total membership of 67, with in addition the chairman and deputy-chairman, who could be elected from outside the body and paid. These figures gave to London, as represented by the metropolitan boroughs, the City of London, and the London County Council, a majority of two-thirds of the representation on the new board. It would be the duty of the board to purchase the undertakings of the metropolitan water companies within an appointed time by agreement or, failing agreement, by arbitration. It was proposed to establish a special court of arbitration, consisting of Sir Edward Fry, late a Lord Justice of Appeal; Sir Hugh Owen, late permanent secretary to the Local Government Board; and Sir John Wolfe Barry, the well-known engineer. While the arbitration clause was an open one, giving full powers to the arbitrators, the Government had adopted the recommendation of the Royal Commission and had decided that in this case the usual addition of 10 per cent. for compulsory purchase should not be allowed. The Water Board would represent, control, and administer the whole area which was now governed by the eight metropolitan water companies and would issue stock bearing interest at 3 per cent. per annum.—In the debate which followed Mr. Long's introductory statement several members took exception to the limited representation given to the London County Council.

Licensing Bill.

A Bill was introduced by Mr. RITCHIE to amend the law relating to the sale of intoxicating liquors and to provide for the registration of clubs. Like the Bill of last session it endeavours to strike at habitual drunkenness. It gives husbands and wives protection against drunken spouses, provides for the committal of habitual drunkards to inebriate homes, and contains clauses which propose to make it an offence to supply drink to habitual drunkards. It also increases the powers of justices with regard to structural alterations in public-houses. With regard to clubs the Bill provides that they must all be registered and in certain circumstances be subjected to police supervision.

FRIDAY, JAN. 31ST.

The Charge for Vaccination Exemption Certificates.

Mr. HARWOOD asked the Home Secretary whether there was any fixed charge for vaccination exemption certificates; whether he was aware that there was a variety in the scale of charges even in neighbouring towns; and whether he would endeavour to secure that these charges should nowhere be excessive.—Mr. RITCHIE replied: The charge for such a certificate varies in different districts in the same way as other fees chargeable by justices' clerks, though not to the same extent as some of these fees. I am doing my best to secure uniformity in respect of this fee as well as others, but my authority in this matter is contingent on a draft table of fees being submitted by the local authority.

MONDAY, FEB. 3RD.

The Case of Dr. R. Rendall of Great Yarmouth.

Dr. MACNAMARA asked the Secretary of State for the Home Department whether his attention had been directed to the case of Dr. R. Rendall of Great Yarmouth, who on Nov. 28th, 1901, was summoned before the General Medical Council and deemed by that body to be guilty of infamous conduct in a professional respect on the ground that he held an appointment as medical officer for the Liverpool Victoria Legal Friendly Society, which canvassed for members, and which society had been established 60 years, was duly registered under the Friendly Societies Act, and comprised a membership of two and a half millions; and whether he would take the opinion of the law officers of the Crown with the view of ascertaining whether the General Medical Council had power under the Medical Acts to declare a properly qualified medical man holding such an appointment guilty of infamous conduct, and thus be able to erase his name from the Medical Register.—Mr. JESSE COLLINGS said: My right hon. friend desires me to say that he does not wish to enter into the details of the particular case referred to, as he understands that it is still, in a sense, *sub judice*; but he is advised that the powers of the General Medical Council as to deciding what is and what is not "infamous conduct in a professional respect" within the meaning of the Medical Act are clearly laid down by that Act and the decisions thereunder; and he sees no necessity for consulting the law officers of the Crown in the matter.

The Sale of Scheduled Poisons.

Mr. CALDWELL asked the Secretary of State for the Home Department whether he was aware that, under the law relating to the sale of scheduled poisons, an unqualified assistant of a medical man or of a registered chemist was prohibited from selling poisons, under penalty of a fine, but that no penalty was attached to the employer for any offence committed by such unqualified assistant; whether he was aware that in the case of registered medical practitioners the General Council of Medical Education and Registration of the United Kingdom had given notice that it would treat as infamous conduct in a professional respect, and have the names erased from the Medical Register, under the twenty-ninth section of the Medical Act, 1858, of any medical practitioners who might leave an unqualified assistant in charge of their medical hall or open shops, whilst no penalty was attached to the registered chemist who employed an unqualified assistant should that assistant sell scheduled poisons; whether it was within the power of the General Medical Council to declare the employment of an unqualified assistant to be infamous conduct of a professional respect under the Medical Acts; and, if so, whether he would introduce legislation which would equally punish a registered chemist who might similarly employ an unqualified assistant, seeing that the danger to the public is equally the same whether the unqualified assistant be that of a medical practitioner or of a registered chemist.—Mr. JESSE COLLINGS replied: My right hon. friend understands that under the Pharmacy Acts, 1868 and 1869, any person who, not being a chemist or a qualified medical practitioner, sells poison is liable to prosecution, but that there is no provision in those Acts for making the employer responsible for the acts of his apprentice or assistant except in the case of a breach of the regulations to be observed in the sale of poisons. As my right hon. friend has said in answer to another question, the powers of the General Medical Council as to deciding what is or what is not "infamous conduct in a professional respect" under

the Medical Act are governed by the terms of that Act and the decisions thereunder, and the Secretary of State for the Home Department has no authority to interpret them. As regards the last part of the question, the subject of the sale of poisons is now being considered by a committee whose recommendations must be awaited before any decision as to the legislation suggested can be arrived at.

The Spread of Small-pox by Tramps.

Mr. PLATT-HIGGINS asked the President of the Local Government Board whether he would state what steps the Local Government Board was taking to prevent the spread of small-pox by tramps.—Mr. GRANT LAWSON, Parliamentary Secretary to the Board, replied: My right hon. friend recently issued circular letters to boards of guardians in which he called attention to the risk of small-pox being spread by means of casual paupers and pointed out the steps which should be taken by the guardians and their officers with a view of diminishing as far as possible the danger from this source.

Mr. PLATT-HIGGINS asked if any consideration of expense, such as extra remuneration to medical officers, would be allowed to stand in the way.—Mr. GRANT LAWSON replied: No, it would not be allowed to stand in the way. The board has not restricted expenditure in the combating of small-pox in any direction.

The Tuberculosis Commission.

Mr. CHANNING asked the President of the Local Government Board whether he could state when the commission appointed to report on Professor Koch's theory that bovine and human tuberculosis were distinct diseases and incommunicable was expected to report.—Mr. GRANT LAWSON replied: I am not in a position to state when the commission will be able to report, but it is not likely that they can do so for a considerable time. I am informed that very extensive experiments will have to be carried out by the commission and that for this purpose laboratories and other buildings have been erected on the farms where this part of the work is to be done. It is, I understand, impossible to say how long these experiments will take, but arrangements have been made for the commission to occupy the farms for three years.

TUESDAY, FEB. 4TH.

The Royal Army Medical Corps.

Sir JOHN BATTY TUKE asked the Secretary of State for War if an early opportunity could be given for debating the warrant for the reconstruction of the Royal Army Medical Corps which he had promised to present to the House.—Mr. BRODRICK replied: I am afraid that I am not yet in a position to say when it is probable that the vote for the Medical Establishment of the Army will be brought forward.

Mr. BLACK asked the Secretary of State for War whether, with the view of encouraging graduates from the Scottish universities to enter the Army Medical Service, he would appoint a professor from one of the Scottish universities upon the Army Medical Advisory Board as had been done in the case of the English and Irish universities.—Mr. BRODRICK replied: In selecting the members of the Board every care was taken to make it as representative as was consonant with the requirements of the Royal Army Medical Corps, which necessitated the personal attention of members of the Advisory Board to the interests of the service. Dr. Galloway, a distinguished Scotch graduate resident in London, lecturer at Charing-cross Hospital, and formerly an examiner in the faculty of medicine at Aberdeen University, was selected to represent the interests of Scotland. I would, however, point out to the hon. member that in addition to Dr. Galloway three of the military medical members are graduates of Scotch medical schools, and Scotland is therefore exceptionally represented on the Board.—Mr. BLACK: Have any of these gentlemen any present connexion with a Scotch university?—Mr. BRODRICK: It will be impossible to make any alteration in the composition of the Board, and I have not the least doubt that the interests of Scotland will be properly cared for.

The Small-pox Epidemic.

Mr. COGHILL asked the President of the Local Government Board whether he could state the total number of cases of small-pox in the metropolis since the present outbreak; and whether it was the intention of the Government this session to bring in a Revaccination Bill in fulfilment of the pledge given by them in the session of 1898.—Mr. GRANT LAWSON replied: According to the Registrar-General's weekly returns 2656 cases of small-pox were notified in the metropolis between June 1st, 1901, and Jan. 25th, 1902. With regard to the second part of the question I cannot hold out any expectation that the Government will introduce a Revaccination Bill during the present session. I am not aware that any pledge was given in 1898 as to the introduction of such a Bill, though the Government promised to consider the matter.—Mr. COGHILL: Is not the cause of the present outbreak the invention of the "conscientious objector"?—Mr. GRANT LAWSON: No, I think not.

Sir JOHN TUKE asked the President of the Local Government Board if he would consider the expediency of adopting in connexion with the present outbreak of small-pox in London the methods for procuring more general revaccination which were resorted to successfully in Glasgow in the year 1901, involving a house-to-house visitation of the community divided into manageable areas and the employment of all medical men willing to assist in the matter.—Mr. GRANT LAWSON replied: It would be impossible to adopt the Glasgow plan throughout the whole of London at one and the same time, but my right hon. friend has under consideration how far it might be practicable to adopt some such methods in particular areas.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Strand, W.C.

The Roentgen Rays in Medical Work. By David Walsh, M.D. Edin. Part I.: Apparatus and Methods, re-written by Lewis Jones, M.D. Cantab., F.R.C.P. Part II.: Medical and Surgical. Third edition. Price 12s. 6d. net.

Hernia: Its Etiology, Symptoms, and Treatment. By W. McAdam Eccles, M.S. Lond., F.R.C.S. Eng. Second edition. Price 7s. 6d. net.

CHURCHILL, J. & A., 7, Great Marlborough-street, W.

Transactions of the Otological Society of the United Kingdom. Vol. ii. Second session, 1900–1901, with list of officers, members, &c. Edited by Arthur H. Cheatle, F.R.C.S., and William Milligan, M.D. Price 10s. net.

The Journal of Mental Science, January, 1902. Price 5s.

CROSBY LOCKWOOD AND SON, 7, Stationers' Hall-court, Ludgate-hill, E.C.

Water and its Purification. By Samuel Rideal, D.Sc. Lond. Second edition, revised and extended. Price 9s. net.

GRIFFIN, CHARLES, AND COMPANY, LIMITED, Exeter-street, Strand, W.C.

A Surgical Handbook: for the use of Students, Practitioners, House Surgeons, and Dressers. By Francis M. Caird, M.B., F.R.C.S. Edin., and Charles W. Cathcart, M.B., F.R.C.S. Eng. & Edin. Eleventh edition. Price 8s. 6d.

Outlines of Practical Physiology: being a Manual for the Physiological Laboratory, including Chemical and Experimental Physiology, with reference to Practical Medicine. By William Stirling, M.D., Sc.D. Fourth edition, revised and enlarged. Price 15s. net.

Sanitary Engineering: A Practical Manual of Town Drainage and Sewage and Refuse Disposal. By Francis Wood, A.M. Inst. C.E., F.G.S. Price 8s. 6d. net.

JOHN BALE, SONS, AND DANIELSSON, Limited, 83–89, Great Titchfield-street, W.

The Climate and Mineral Waters of Caledon, South Africa. By G. W. B. Daniell, M.R.C.S. Eng., L.R.C.P. Lond. Price not stated.

The Croonian Lectures on the Chemical Side of Nervous Activity. Delivered before the Royal College of Physicians of London in June, 1901. By W. D. Halliburton, M.D., F.R.S. Price 5s. net.

KIMPTON, HENRY, 13, Furnival-street, Holborn, E.C.

Progressive Medicine. Edited by Hobart Amory Hare, M.D., assisted by H. R. M. Landis, M.D. Volume iv., December, 1901.

LEHMANN, J. F., München.

Lehmann's Medizinische Handatlanten:—

Band XXVI. Atlas und Grundriss der Histologie und Mikroskopischen Anatomie des Menschen. Von Privat-dozent Dr. J. Sobotta in Würzburg. Preis gebunden Mk. 20.

Band XXVII. Atlas und Grundriss der Psychiatrie. Von Wilhelm Weygandt, Dr. Phil. et Med., Privat-dozent der Psychiatrie an der Universität Würzburg. Preis gebunden Mk. 16.

Band XXVIII. Atlas und Grundriss der Gynäkologischen Operations-lehre. Von Dr. Oskar Schaeffer, Privat-dozent an der Universität Heidelberg. Preis gebunden Mk. 12.

LIPPINCOTT, J. B. COMPANY, Philadelphia.

An Experimental and Clinical Research into Certain Problems relating to Surgical Operations. By George W. Crile, A.M., M.D., PH.D. Price 12s. 6d.

MURRAY, JOHN, Albemarle-street, W.

The Harveian Oration. Delivered before the Royal College of Physicians of London on Oct. 18th, 1901, by Norman Moore, M.D. Price 2s. 6d. net.

The Journal of the Royal Agricultural Society of England. Volume lxii. Free to members. Price to non-members 12s.

NEW SYDENHAM SOCIETY (Agent and Depot for the Publications, H. K. Lewis, London).

Selected Essays and Monographs, chiefly from English Sources. Vol. 175.

RENSHAW, HENRY, 356, Strand, W.C.

A Manual for Assistants' Examination, Apothecaries' Hall. By Mabel F. Stanley, Qualified Dispenser, Apothecaries Hall. Price not stated.

SMITH, ELDER AND CO., 15, Waterloo-place, S.W.

Lectures on Chemical Pathology in its Relation to Practical Medicine. Delivered at the University and Bellevue Medical School, New York City. By C. A. Herter, M.D. Price 7s. 6d.

SOCIÉTÉ D'EDITIONS SCIENTIFIQUES, 4, Rue Antoine Dubois, Paris.

Traitement des Maladies Contagieuses de l'Appareil Générateur. By Dr. F. Buret, Secrétaire-Général de la Société de Médecine de Paris. Price 4 francs.

Essai de Sémiologie Urinaire. By Camille Vieillard, Pharmacien-Chimiste, Lauréat du Concours Brassac. Preface by Albert Robin, de l'Académie de Médecine. Price 6 francs.

WILSON, EFFINGHAM, 11, Royal Exchange, E.C.

Food and Drugs. A Manual for Solicitors, Public Analysts, Inspectors, Traders, and Others. Second edition, revised and enlarged. Price 3s. 6d. net.

WITHERBY AND CO., 326, High Holborn, W.C.

Lean's Royal Navy List. No. 97. January, 1902. Founded and edited by Lieutenant-Colonel Francis Lean, Royal Marine Light Infantry (retired). Price 7s. 6d.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ALLARDICE, WILLIAM C., M.D., C.M. Glasg., has been appointed Assistant Surgeon to the North Staffordshire Infirmary and Eye Hospital.

CANE, HOWARD, M.D., L.R.C.P. Lond., M.R.C.S., has been appointed by the London County Council Medical Officer to the Staff at the Crossness Outfall Works, vice Mr. I. Elliot.

DIXON, W. J., M.B., M.S. Madras, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Assistant Medical Officer to the Concentration Camp, Standerton, Transvaal.

DONALD, W., M.D. Aberd., has been appointed Certifying Surgeon under the Factory Acts for the Banff District.

FIRTH, J. LACY, M.D., M.S. Lond., F.R.C.S. Eng., has been appointed Surgeon to the Bristol General Hospital, vice C. F. Pickering, F.R.C.S., resigned.

GARRETT, P. G., M.B., B.S. Durh., has been appointed Certifying Surgeon under the Factory Acts for the Earl Shilton District of the County of Leicester.

HAMILTON, J. STIRLING, B.A. Cantab., has been appointed House Physician to St. Bartholomew's Hospital.

HARPER, J. R., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer of Health for the Borough of Barnstaple.

HULBURT, H. L. P., M.A. Cantab., has been appointed House Physician to St. Bartholomew's Hospital.

KERR, JAMES, M.D. Cantab., has been appointed Medical Officer to the School Board for London.

KYLE, HENRY GREVILLE, B.A., M.B., B.Ch. Oxon., has been appointed Honorary Assistant Surgeon to the Bristol General Hospital, vice J. L. Firth, appointed Honorary Surgeon.

LITTLE, A. J., L.R.C.P. Irel., L.S.A., has been appointed Medical Officer of the Uxbridge Union.

MACKENZIE, DONALD, M.B., C.M. Aberd., has been appointed Certifying Surgeon under the Factory Acts for the Ullapool District of the County of Ross and Cromarty.

MATURIN, H., M.R.C.S., L.S.A., has been appointed Medical Officer of Health for the Hartley Wintney Rural District, Hampshire.

MEADE-KING, R. LIDDON, M.D., B.S. Durh., L.R.C.P., M.R.C.S., has been appointed Honorary Obstetric Physician to the Taunton District Nursing Association.

NICHOLSON, BALFOUR STEWART, M.B., M.S. Glasg., has been appointed Medical Officer of the Parish of Clackmannan.

PICKERING, CHARLES FREDERICK, .R.C.S. Eng., L.R.C.P. Lond., has been appointed Honorary Consulting Surgeon to the Bristol General Hospital.

PINKER, H. G., M.R.C.S., L.R.C.P., has been appointed Intern Midwifery Assistant at St. Bartholomew's Hospital.

SAYER, THOMAS, M.R.C.S., L.R.C.P., has been appointed Resident Medical Officer to the Leeds Sanatorium for Consumptives at Gateforth.

SHENNAN, THEODORE, M.D. Edin., F.R.C.S. Edin., has been appointed Superintendent Pathologist to the Edinburgh Royal Infirmary.

SHRUBSALL, F. C., M.A., M.B., B.C. Cantab., has been appointed Extern Midwifery Assistant at St. Bartholomew's Hospital.

SUNDERLAND, SEPTIMUS P., M.D. Brux., has been appointed Physician-in-chief to the Ancient Royal Maternity Charity, vice Dr. Fancourt Barnes, retired.

THOMAS, A. E., M.B. Lond., has been appointed House Physician to St. Bartholomew's Hospital.

URWICK, R. H., M.A., M.B., B.C. Cantab., has been appointed House Physician to St. Bartholomew's Hospital.

WARING, H. J., M.S., B.Sc., F.R.C.S., has been elected Assistant Surgeon to St. Bartholomew's Hospital.

WEIR, H. H., B.A. Cantab., has been appointed House Physician to St. Bartholomew's Hospital.

WORTHINGTON, R. T., M.R.C.S., L.R.C.P., has been appointed Extern Midwifery Assistant at St. Bartholomew's Hospital.

YOUNG, ROBERT ARTHUR, M.D., B.Sc. Lond., has been appointed Assistant Physician to the Middlesex Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ANCOATS HOSPITAL, Manchester.—Resident House Surgeon. Salary £100 per annum, with board, &c.

BOLTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £80 per annum, with apartments, board, and attendance.

BRADFORD EYE AND EAR HOSPITAL.—Honorary Surgeon.

BRIDGWATER INFIRMARY.—House Surgeon. Salary £80 a year, with board and residence.

BRISTOL ROYAL INFIRMARY.—Casualty Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

BURY INFIRMARY.—Junior House Surgeon. Salary £90, with residence and attendance.

CAITHNESS COUNTY COUNCIL.—Medical Officer of Health. Salary £250 and £50 for travelling and other expenses.

CLOGHER UNION.—Medical Officer of Workhouse. Salary £100 per annum.

DISTRICT INFIRMARY, Ashton-under-Lyne.—House Surgeon. Salary £120 a year and board and lodging.

DURHAM COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary £140, rising to £160, with board, laundry, and attendance.

DURHAM COUNTY HOSPITAL.—House Surgeon. Salary £100 a year, and board and lodging.

EASINGTON UNION AND RURAL DISTRICT COUNCIL, Castle Eden, Durham.—Medical Officer, &c. Salary £150 per annum.

FISHERTON ASYLUM.—Assistant Medical Officer, single. Salary to commence at £150 per annum, with board, lodging, and washing.

GENERAL HOSPITAL, Wolverhampton.—Assistant House Physician, also Assistant House Surgeon, both for six months, with honorarium at rate of £75 per annum, and board, lodging, and washing.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—House Surgeon, unmarried. Salary £75 per annum, with residence, board, and washing.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Two House Surgeons (Senior and Junior). Salaries: Senior, £100; Junior, £75; each with residence, board, and washing.

KENT AND CANTERBURY HOSPITAL.—House Surgeon, unmarried. Salary £100 a year, with board and lodging.

MIDDLESEX HOSPITAL, W.—Medical Registrar.

MOUNT VERNON HOSPITAL FOR CONSUMPTION, Hampstead and Northwood.—Junior Resident Medical Officer for six months. Honorarium at rate of £60 per annum.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-upon-Trent.—Assistant House Surgeon for six months. Board, apartments, and washing, and at least £25 as honorarium.

PRESTON ROYAL INFIRMARY.—Assistant House Surgeon. Salary £60 per annum, with board, lodging, washing, &c.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—House Physician for six months. Salary at rate of £60 per annum, with apartments, board, and washing.

ROYAL INFIRMARY OF EDINBURGH.—Assistant Pathologist. Honorarium £50 guineas per annum.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Ventnor.—Assistant Resident Medical Officer, unmarried. Salary £100 per annum, with board and lodging.

STOCKPORT INFIRMARY.—House Surgeon. Salary £100 per annum, with residence, board, and laundry.

SUFFOLK COUNTY ASYLUM.—Second Assistant Medical Officer. Salary £130 per annum, rising to £150, with board, lodging, laundry, and attendance.

SUSSEX COUNTY HOSPITAL.—House Physician. Salary £80 per annum, with board, washing, and residence in the hospital.

WARNEFORD HOSPITAL, Leamington.—House Surgeon. Salary £100 per annum, with board, washing, and apartments.

WESTMINSTER HOSPITAL, opposite Westminster Abbey.—Assistant Surgeon.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeon, under the Factory Acts, at Ovenden in the West Riding of the county of York; at Brixworth, in the county of Northampton; at Beckington, in the county of Somerset; and at Epworth, in the county of Lincoln.

Births, Marriages, and Deaths.

BIRTHS.

BENNETT.—On the 30th ult., at 22, Broad-street, Birmingham, the wife of W. Edward Bennett, F.R.C.S. Eng., of a daughter.

BOWES.—On Jan. 18th, at Rishton, Lancs., the wife of Jos. E. Bowes, M.B., C.M., of a daughter.

FINLEY.—On Jan. 25th, at West Malvern, the wife of Harry Finley, M.D. Lond., of a son.

MARRIAGE.

COPLEY—FOWLER.—On Jan. 8th, 1902, at St. James's Church, Stamford-hill, by the Rev. Thomas Goodwin, Stanley Copley, M.R.C.S., of Stamford-hill, Durban, S. Africa, to Kate Gwendoline Fowler, daughter of Edwin Fowler, J.P., of Hill-grove, Pontypool, England.

DEATHS.

COLLINSON.—On Dec. 22nd, at Sydenham-road, after a long and painful illness, Hyacinth, the dearly loved wife of Thomas A. Collinson, M.R.C.S., L.R.C.P. Lond., L.S.A., and A.K.C. Lond., and daughter of the late Colonel Duncombe-Perceval, R.E., of Acton.

COPPIN.—On the 31st January, 1902, at 181, High-street, Plumstead, Morney Coppin, M.R.C.S., in his 90th year.

LANKESTER.—On Jan. 30th, at Salisbury-road, Leicester, Henry Lankester, M.R.C.S., L.S.A., J.P., aged 76.

LATTER.—On Jan. 29th, in London, of heart failure, Cecil Latter, M.D. Camb., of Earl's-avenue, Folkestone.

MARTINDALE.—On the 2nd inst., suddenly, at 19, Devonshire-street, Portland-place, W., William Martindale, F.C.S., F.L.S., Past President of the Pharmaceutical Society, aged 61. Friends will please accept this, the only intimation.

RATTRAY.—On the 30th Jan., at Hampstead, Eliza Anne, beloved wife of Alexander Rattray, M.D. (late of Bournemouth).

STOWERS.—On Feb. 3rd, at Clapham-road, S.W., Nowell Stowers, M.R.C.S., in his 87th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

ANTISEPSIS IN HAIRDRESSING.

LONDON, as in so many things, is rather behind the times in matters of cleanliness as regards hairdressing. In shaving possibly the chance of infection is not so great, for although there is common use of the brush and soap, to say nothing of the razor, yet hot water and soap are very fair bactericides in themselves. But the common use of brushes and combs is not at all unlikely to be a fruitful source of infection. People are wiser now than they were some 30 years ago when we knew a lady who on her children returning from school, where they had had scarlet fever, expressed her intention of taking them to a hairdresser so that their heads might have a good brushing. "Children's heads are always scurfy after scarlet fever, and these machine brushes are so much better than an ordinary hair-brush," said this artless person. But apart from scarlet fever there are plenty of diseases likely to be spread by the use of common brushes and combs. In Paris stringent rules are laid down for the sterilising of hairdressers' implements. In London, however, it has been left to voluntary effort to establish a place where antisepsis is attended to. The Antiseptic Hair Dressing Association has opened a shop at 51, Jermyn-street, S.W., where all the razors are fitted with detachable metal handles, so that both blade and handle can be sterilised. The combs are metal and so are the backs of the brushes. Only hand-brushes are used, and for shaving each customer is given a separate dose of soap powder, taken straight from a little capsule. The brush is sterilised after each using and the "operators" wear waterproofed sterilisable overalls. The head-rests on the chairs are pneumatic indiarubber pads which can easily be detached and washed. All the basins are made with pedal taps. We think that the idea is a very good one and deserves to succeed.

THE RELATION OF THE CHURCH TO SANITARY REFORM.

THE vicar of the Church of St. Michael and All Angels, Blackheath Park, has sent us a copy of his *Parish Notes* for February. We are glad to see that he refers to our recent article upon the Relation of the Church to Sanitary Reform and urges in the strongest manner the utility of vaccination. The vicar quotes the figures recently published by the Metropolitan Asylums Board and adds: "We hope that no further argument is needed to induce everyone who reads and digests these figures to be revaccinated at once ....." Argument is useless in dealing with pronounced anti-vaccinationists. Dr. Johnson, when a lady asked him why he had given a certain definition in his dictionary, replied, "Ignorance, madam, sheer ignorance." But the average anti-vaccinationist is too ignorant to know that he does not know. We hope that the clergy will continue to try to enlighten their flocks upon the subject of small-pox and its preventive.

HOW DISEASE IS SPREAD.

THE difficulties with which the sanitary authorities have to contend in their efforts to stamp out disease are enormous. In a leading article in THE LANCET of Jan. 25th (p. 239), we referred to several cases in which persons suffering from infectious diseases had carried infection from place to place, and we print below a further list of cases to which we have had our attention called during the month of January. It should be remembered that in all probability the number of cases which receive the light of publicity bears but a small proportion to those which escape notice.

At Warminster petty sessions on Jan. 2nd, a man was fined £1 and 8*s.* costs for entering an inn whilst knowing himself to be suffering from small-pox.

At the East Kerrier District Council meeting held at Falmouth on Jan. 4th the medical officer of health, referring to scarlet fever which lingered about certain parts of his district, said that he had a strong suspicion that many cases were being concealed.

The medical [officer of the Llandilo-Talybont division of Llangyfelach Rural District Council told the following story at the meeting of the council on Jan. 7th. Four cases of typhoid fever were, he said, reported from the Fforestfach district, and these were due in the first place to infection imported from elsewhere. A child died from typhoid fever in the Rhondda and the body was brought to Cockett for interment. The funeral party, including the mother of the child, visited two houses in the same street, one the house of the grandmother and the other the house of an aunt of the deceased child. Exactly a fortnight later the mother of the deceased child died in the Rhondda from typhoid fever. One case occurred in each of the two houses visited by the funeral party, and the remaining two cases occurred in two houses which received milk from the grandmother of the deceased child, the milk being carried to these houses by one of the patients from the two houses already mentioned who was ailing for a considerable time before she kept her bed and before a medical man was called in. A case of wilful exposure by a person suffering from scarlet fever was also reported. A servant girl in Swansea was taken ill, and although informed by the medical attendant of the necessity of avoiding exposure she proceeded to her home in Waunarlwyd.

The following disgraceful case was disclosed at Barrow, Lancashire, on Jan. 17th, when a man was charged with neglecting his eight children whose ages ranged between three and 15 years. The inspector for the National Society for the Prevention of Cruelty to Children said that the case had been under observation for over 12 months. The children were found to be in a filthy condition and practically starving. The house only contained five rooms, yet there were no less than 23 persons living in it. The man could earn at the steel works £5 a week, but he was always drinking and would not work. The medical officer of health said that the house was in a deplorable condition. The house came under his observation six months ago and it was there that the small-pox epidemic broke out. The family were all unvaccinated and owing to the outbreak of small-pox in the house the disease spread to no less than 30 people in the town. It might just as easily have spread to 30,000. Through these people it was carried to Staffordshire and Blackburn. The authorities put new furniture and bedding into the house, but these were soon in as filthy a condition as those destroyed. The prisoner said that one of his elder girls, aged 19 years, went to Birmingham and that was how the disease was carried. All this neglect, he said, had occurred since his wife died. He was sent to prison for four months.

A married woman of West Town, Dewsbury, was fined 20*s.* and costs on Jan. 21st for exposing a child suffering from scarlet fever, though warned of the infectious character of the disease.

THE CASE OF THE LATE MR. R. B. ANDERSON.

To the Editors of THE LANCET.

SIRS,—I shall be obliged if you will insert the following list of those who have been kind enough to respond to my appeal on behalf of the family of the late Mr. R. B. Anderson. As will have been seen from the announcement by the honorary secretary of the fund subscriptions will be received up to the end of February, so that there is still time for those who have been *thinking* of subscribing to do so. The total sum received is still well under £200, a sum quite inadequate for the needs of the family. While not wishing to make invidious comparisons I cannot resist pointing to the very different result of the Smyth appeal. In that most deserving case money has simply poured in, while here, in a case which ought to appeal specially and unmistakeably to the feelings of the profession and which could not be expected to get much help from the general public, repeated solicitations have only resulted in the beggarly sum before mentioned. I should like to bring to the notice of the members of medical unions and ethical societies the example set by the Gateshead Medical Association. At its annual dinner, as the result of an appeal made by me, the sum of £22 was raised without difficulty. Could not this be done by other societies supposed to be interested specially in medical politics?

I am, Sirs, yours faithfully,

Gateshead, Jan. 25th, 1902. ALFRED COX.

	£	*s.*	*d.*
Dr. R. S. Peart (North Shields)	2	2	0
Dr. S. Woodcock (Manchester)	1	1	0
Mr. C. H. W. Parkinson (Wimborne)	1	0	0
Mr. J. Thomarson	0	7	6
Dr. C. J. Allan (Lasswade)	0	3	0
Per the *General Practitioner*—			
Dr. E. W. Adams (Sheffield)	0	5	0
L.R.C.P., Sheffield (second donation)	0	2	6
Mr. S. E. L. Smith (Birmingham)	0	2	6
Collected at the Dinner of the Gateshead Medical Association—			
Mr. J. Rutherford Morison (Newcastle-on-Tyne)	10	0	0
Dr. D. Drummond (Newcastle-on-Tyne)	2	0	0
Dr. J. H Hunter (South Shields)	1	1	0
Dr. E. W. Diver (Shotley Bridge)	1	1	0
Mr. A. S. Jaques (Gateshead)	1	1	0
Dr. W. J. Durant (Gateshead)	1	1	0
Mr. J. W. Mackay (Pelaw)	0	11	0
Professor T. Oliver (Newcastle-on-Tyne)	0	10	0
Dr. H. J. Gilbert (Gateshead)	0	10	0
Mr. J. Todd (Gateshead)	0	10	0
Mr. A. A. Abraham (Gateshead)	0	10	6
Mr. W. H. Davis (Low Fell)	0	10	0
Dr. R Anderson (Gateshead)	0	10	0
Mr. C. G. B. Kapp (Gateshead)	0	10	0
Dr. A. Cox (Gateshead) (second donation)	0	9	0
Dr. W. Smith (Gateshead) (second donation)	0	5	6
Mr. A. Dougall (Dunston-on-Tyne)	0	5	0
Dr. A. Green (Gateshead)	0	5	0
Mr. S. V. Robinson (Gateshead)	0	5	0
Mr. W. Galloway (Low Fell)	0	5	0
Dr. J. R. Williams (Penmaenmawr)	1	1	0
Dr. H. Smith (Durham)	1	1	0
Mr. S. Basham (Newcastle-on-Tyne)	0	10	6
"A Doctor's Wife" (Brighton)	0	10	0
Mr. E. S. Gooddy (Llandudno)	0	5	0

THE DIAGNOSIS OF SMALL-POX.

ON Feb. 4th Dr. John Colin Matheson of Gerrard-street, Soho,—not of 11, Soho-square, as stated in the Medical Directory,—appeared to an adjourned summons which charged him with neglecting to send a certificate to the medical officer of health that a patient under his care was suffering from small-pox. Dr. Matheson elected to give evidence and said that on Dec. 20th he was called to see a man named Thackery whom he found had a rash. He was unable to form a definite opinion as to the nature of the disease and on the 21st the rash had extended all over the body. The rash was

accompanied by subcutaneous hæmorrhages. He did not see Thackery again until the morning of the 23rd, when he suggested a consultation. The family, however, could not afford this, so he recommended Thackery's removal to the hospital. Thackery, however, died the same evening at home in witness's presence. The disease was diagnosed as hæmorrhagic small-pox. Witness denied that he ever told Miss Cookman that he had attended a case of small-pox or that he put his arm round her neck. Miss Cookman contracted small-pox. He allowed, in cross-examination, that he had given a certificate to Thackery that he was suffering from influenza. This was for a benefit society. Dr. J. W. Washbourn gave evidence on behalf of Dr. Matheson. He said that hæmorrhagic small-pox was difficult to diagnose. The symptoms presented by Thackery as described by Dr. Matheson were perfectly consistent with those of purpura hæmorrhagica. Mr. Fenwick said that the charge would be dismissed. There was no doubt that Thackery had died from small-pox, but there was a doubt as to whether Dr. Matheson knew that Thackery was suffering from small-pox. Dr. Washbourn remarked that in the present day the ordinary run of practitioners had very little chance of studying small-pox. He thought that the authorities of the small-pox hospitals ought to give opportunities to the general practitioner of studying that disease. With this remark we quite agree, and we also think that Dr. Matheson should have seen the patient on Dec. 22nd. All diseases accompanied by hæmorrhagic rashes are very serious, and surely it would have been possible to get a consultation at a reduced fee.

VACCINATION FEES.

THE following report of proceedings at a recent meeting of the Hungerford Board of Guardians is taken from the *Newbury News*:—

"*Vaccination.*—Statistics for the cost of vaccination for the last year were placed before the board. In 1898 the cost was £52 1*s.* 4*d.*; in 1899, £112 12*s.* 5*d.*; in 1900, £132 14*s.* 5*d.*; in 1901, £148 11*s.* 2*d.* The board considered the increase a very serious item and decided to support a petition on the proposition of Messrs. Brown and Clewett from the Edington Guardians to the Local Government Board, asking that the medical officers' fees might be reduced, as they did not consider it was the intention of Parliament that the Act should work out to such advantage to the medical officers."

The correspondent who sends us the cutting informs us that the scale for fees is as follows: for vaccination at the surgery, 2*s.* 6*d.*; for vaccination at a patient's house within one mile, 5*s.*; above one mile, 7*s.* 6*d.* He points out that by the new rules laid down by the Local Government Board the vaccinator has to attend every case until well. We have no information as to whether the fees mentioned were settled by the board of guardians in consultation with the medical men, or whether the decision on account of the two bodies interested was left in the hands of the Local Government Board; but, judging by the terms of the proposition of the Edington Guardians which was adopted, we suppose that the fees were fixed by the Local Government Board. We cannot see that the fees are excessive. A vaccinated patient wants looking after for a week at least and very often for 10 days or even longer. A small-pox epidemic is infinitely more expensive and if the guardians throw difficulties in the way of vaccination they may very probably find that the rates will be doubled or even trebled.

A CURE FOR WARTS.

To the Editors of THE LANCET.

SIRS,—Would some of your readers kindly recommend a cure for warts (on the hands)? My patient—a lady—has been applying glacial acetic acid for months—I might say years—with absolutely no benefit. Indeed, in spite of this treatment some have actually increased in size, while fresh ones from time to time have made their appearance on the scene. All told, the number of these excrescences is over 15. Anticipating some comforting suggestions,

I am, Sirs, yours faithfully,

Feb. 3rd, 1902. AT MY WIT'S END.

MEDICAL PRACTITIONERS AND THE SALE OF POISONS.

To the Editors of THE LANCET.

SIRS,—Your annotation in THE LANCET of Jan. 4th, p. 44, entitled, "Medical Practitioners and the Sale of Poisons," in reply to "Vulneratus," leads me to ask you a question as to my position (probably that of hundreds of others). For 20 odd years I have been in general practice and have dispensed my own medicine, either personally or through an assistant (not always qualified). Of course, numbers of such bottles of medicine have contained scheduled poisons. But I have never used a label containing my name and address, as I always have thought, and continue to think, that the addition of the name and address to the direction for taking the medicine savours of advertisement. With hundreds of others I use the ordinary surgeons' slip label, as it is called, but if the General Medical Council insists upon my advertising my name and address I must bow to its decision and do so. The further question of keeping a book falls in with the usual custom of keeping a copy of the prescription for future reference and not necessarily for registering the sale of a poison. As a matter of fact, I resent the idea of "selling medicine" altogether. I do not charge my patients for medicine: I charge them for treatment.

I am, Sirs, yours faithfully,

P. B. W.

C. S. R.—1. As the directors are paying the bill they would naturally expect to be able to choose the operator. If the workmen had made it a condition of their acquiescence in vaccination that they should be vaccinated by the surgeon to the works sick club the directors would probably have agreed. 2. We do not see from our correspondent's letter that the medical man in question knew anything of the works sick club, although he might have assumed that, in connexion with a business of such magnitude, such an institution was in existence. 3. We cannot guess what the "Royal College of Physicians" might think, but certainly the London College could find precedent for disapproval.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.) St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.) West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.).

WEDNESDAY (12th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.).

THURSDAY (13th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.).

FRIDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square, (9.30 A.M.), City Orthopædic (2.30 P.M.).

SATURDAY (15th).—Royal Free (9 A.M. and 2 P.M.), London (2 P.M.) Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.), Throat, Golden-square (9.30 A.M.)

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (10th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Clinical Evening. Mr. E. Owen: Case of Traumatic Rupture of the Prostatic Urethra in a Boy.—Dr. W. Ewart: (1) Case of Senile Anæmia associated with Gouty Rheumatoid Arthritis; (2) Case of Chronic Nephritis treated by Drainage and Feeding.—Mr. C. B. Keetley: Case illustrating the use of Thiersch's Grafts in Excision of the Hip.—Mr. E. M. Little: Two Cases of Late Rickets.—Dr. W. E. Wynter: Three Cases of Chronic Œdema.—Mr. T. H. Kellock: Case of Actinomycosis of the Tongue after Treatment by Cauterisation and Iodide of Potassium. Dr. B. Potter: Case of Nodding Spasm.

TUESDAY (11th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—Mr. C. Heath: Two Cases of Ligature of the Left Carotid for Aneurysm of the Arch of the Aorta, with the post-mortem specimens of four cases.

WEDNESDAY (12th).—DERMATOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—5.15 P.M. Demonstration of Cases of Interest.

THURSDAY (13th).—BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Specimens will be shown by Dr. F. W. Ramsay, Mr. R. O'Callaghan, and Dr. H. Macnaughton-Jones. Dr. H. Croom (in-coming President): Inaugural Address.

FRIDAY (14th).—CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Papers:—Mr. G. Barling: Seventy-four Cases of Appendicitis with Localised Suppuration, with special reference to the treatment of the appendix in such cases.—Mr. F. C. Wallis: The Treatment of Intra-peritoneal Abscess of the Appendix, illustrated by cases.

INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH (9, Adelphi-terrace, W.C.).—Dr. W. A. Evans (Bradford): The Factory and Workshop Act, 1901.

BRITISH ELECTRO-THERAPEUTIC SOCIETY (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Dr. S. Sloan (Glasgow) will show his Faradimeter.—Dr. G. Herschell will give a demonstration on Modern Induction Coils.—Dr. L. Jones: Present-day Electro-Therapeutics.

ANATOMICAL SOCIETY OF GREAT BRITAIN AND IRELAND (St. George's Hospital Medical School).—4 P.M. Papers and Demonstrations by Dr. J. Griffiths, Prof. F. O. Parsons, Mr F. Jaffrey, and Mr. J. S. Goodall.

SATURDAY (15th).—BRITISH ORTHOPÆDIC SOCIETY (City Orthopædic Hospital, Hatton-garden, E.C.).—4.30 P.M. Cases will be shown. Discussion on Fracture Deformities (opened by Mr. J. J. Clarke).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (10th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Mr. C. P. White: The General Pathology of Tumours. (Erasmus Wilson Lecture.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. A. Whitfield: Clinique. (Skin.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Saunders: Therapeutics.

TUESDAY (11th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. C. T. Williams: Clinique. (Medical.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Robinson: Uterine Hæmorrhage.

ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Dr. A. Macfadyen: The Cell, its means of Offence and Defence. Immunity.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury).—3.30 P.M. Sir W. Gowers: Degenerative Diseases of the Nervous System.

WEDNESDAY (12th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Mr. C. P. White: The General Pathology of Tumours. (Erasmus Wilson Lecture.)

THE SANITARY INSTITUTE (Parkes Museum, Margaret-street, W.).—8 P.M. Discussion on the Prevention of Small-pox in the Metropolis (opened by Mr. W. Blyth).

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Cantlie: Clinique. (Surgical.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. McAdam Eccles: Lantern Demonstrations on Hernia.

THURSDAY (13th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Clinique. (Surgical.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Davis: Medical Anatomy and Physical Diagnosis.

CHARING-CROSS HOSPITAL.—4 P.M. Dr. A. Routh: Gynæcological Demonstration. (Post-Graduate Course.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Mr. Collier: Demonstration of Selected Cases.

FRIDAY (14th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Mr. C. P. White: The General Pathology of Tumours. (Erasmus Wilson Lecture.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. H. Tilley: Clinique. (Throat.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Abraham: Skin Cases.

ROYAL INSTITUTION OF GREAT BRITAIN.—9 P.M. Major P. A. MacMahon: Magic Squares and other Problems on a Chess Board.

SATURDAY (15th).—ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. The Right Hon. Lord Rayleigh: Some Electrical Developments.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1901, which was completed with the issue of Dec. 28th, and the Title-page to the Volume, were given in THE LANCET of Jan 4th.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1901 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 6th, 1902.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade	Min Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Jan. 31	30·66	E.	0.01	47	40	31	36	37	Overcast
Feb. 1	30·60	E.	...	68	38	33	33	34	Fine
,, 2	30·21	E.	...	65	35	32	33	33	Snowing
,, 3	30·03	N.E.	0·01	38	37	32	34	35	Raining
,, 4	30·09	E.	0·19	42	38	33	36	37	Overcast
,, 5	30·01	S.E.	...	40	37	34	34	36	Overcast
,, 6	29·55	N.E.	...	46	39	34	34	36	Overcast

During the week marked copies of the following newspapers have been received:—*Wynberg Times, Reading Mercury and Oxford Gazette, Western Morning News, Echo, Glasgow Evening News, Surrey Herald, Manchester Guardian, Morning Leader, Star, Leeds Herald, Manchester Dispatch, Daily Graphic, Evening Standard, South Wales Daily News, Standard, Slate, Freeman's Journal Birmingham Post, South Wales Echo, Birmingham Mail, Hartlepool Mail, City Press, Tunbridge Wells Advertiser, Church Family Newspaper, Army and Navy Gazette, Clinical Journal, Nursing Record, Sanitary Record, The Rock, Nordiskt Medicinskt Arkiv, Revista Ibero-Americana de Ciencias Médicas, Wolverhampton and Coventry News, Middlesboro' Daily Gazette, &c.*

Communications, Letters, &c., have been received from—

A.—Monsieur J. Astier, Asnières; Messrs. Armour and Co., Lond.; Messrs. P. P. Arnold and Sons, Lond.; Mr. J. Barcroft Anderson, East London; Aix-les-Bains Comité de Publicité; Monsieur F. Alcan, Paris.

B.—Mr. S. F. Butcher, Bury; Mr. T. F. Barham, Bridgwater; Mr. G. V. Benson, Lewes; Messrs. Boulton and Paul, Norwich; Messrs. J. H. Booty and Son, Lond.; Messrs. Bayliss, Thomas, and Co., Coventry; Bristol Royal Infirmary, Secretary of; Bolton Infirmary, Secretary of; Dr. D. Bower, Bedford; Borough of Douglas, Isle of Man, Clerk of; Bridgwater Infirmary, Hon. Secretary of; Mr. D. Turner Belding, East Dereham; Messrs. Batabyal and Co., Calcutta; Sir Lauder Brunton, Lond.; Dr. J. O. Brookhouse, Nottingham; *British Medical Journal*, Editor of; British Gynæcological Society, Lond., Hon. Secretary of.

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I.—Ingham Infirmary, South Shields, Secretary of; Institute of Chemistry of Great Britain and Ireland.

J.—Mr. H. R. Jackson, Hull; Dr. J. Holmes Joy, Tamworth; Messrs. Jobson and Marshall, Dudley; Dr. Robert Jones, Woodford Bridge.

K.—Dr. J. A. Knight, Eatonton, Georgia, U.S.A.; King Edward's Hospital Fund for London, Hon. Secretaries of; Messrs. R. A. Knight and Co., Lond.

L.—Dr. J. Lee, Clacton-on-Sea; Rev. F. Long, Weaverhall; Dr. D. B. Lees, Lond.

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Y.—Mr. H. C. Yates, Macclesfield.

Letters, each with enclosure, are also acknowledged from—

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